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PHASE I RFI/RI REPORT

WOMAN CREEK PRIORITY DRAINAGE OPERABLE UNIT NO. 5

ROCKY FLATS ENVIRONMENTAL TECHNOLOGY SITE, COLORADO

APPENDIX N ATTACHMENTS, APPENDIX O

Environmental Restoration • Rocky Flats Environmental Technology Site

Prepared For:

U.S. DEPARTMENT OF ENERGY
Rocky Flats Environmental Technology Site
Golden, Colorado

October 1995

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Attachment 1
Exposure Parameters

Attachment 1
Table 1
Bioconcentration Factors

Analyte	Log K_{ow} [1]	Water Solubility	Invertebrate Bioconcentration Factor	Fish Bioconcentration Factor	Source 1	Source 2
Metals						
Aluminum	NA	NA	231	231	ORNL	—
Antimony	NA	NA	1	1	ORNL	—
Arsenic	NA	NA	17	17	ORNL	—
Barium	NA	NA	NA	NA	—	—
Beryllium	NA	NA	19	19	ORNL	—
Cadmium	NA	NA	12,400	12,400	ORNL	—
Chromium (VI)	NA	NA	3	3	ORNL	—
Cobalt	NA	NA	NA	NA	—	—
Copper	NA	NA	290	290	ORNL	—
Lead	NA	NA	45	45	ORNL	—
Lithium	NA	NA	NA	NA	—	—
Manganese	NA	NA	NA	NA	—	—
Mercury	NA	NA	4,300	4,300	AQUIRE	—
Molybdenum	NA	NA	NA	NA	—	—
Nickel	NA	NA	106	106	ORNL	—
Selenium	NA	NA	322	322	AQUIRE	—
Silicon	NA	NA	NA	NA	—	—
Silver	NA	NA	240	1	AWQC for Ag EPA 1980	—
Strontium	NA	NA	100	5	Killough & McKay, estimated from Sr-89	—
Thallium	NA	NA	34	34	ORNL	—
Tin	NA	NA	2,600	2,600	Eisler 1989	—
Vanadium	NA	NA	NA	NA	—	—
Zinc	NA	NA	966	966	ORNL	—
Pesticides, Herbicides, and PCBs						
4,4-DDT	NA	NA	NA	40,142.10	ORNL	—
Aldrin	5.52	NA	NA	9,229.96	Knox, Sabatini & Canter 1993	ORNL estimation
Aroclor-1248	NA	NA	NA	30,338.90	ORNL	—
Aroclor-1254	NA	NA	NA	51,286.10	ORNL	—
Aroclor-1260	NA	NA	NA	660,000	Clemson	Toxicological Profile for Selected PCBs. U.S. Department of Health and Human Services, TP-92/16. 1993.
delta-BHC	NA	NA	NA	6,391.46	ORNL	mixed isomers
Dieldrin	NA	NA	NA	1,720.28	ORNL	—
Endosulfan sulfate	3.66	NA	NA	354.8	Clemson	ORNL estimation
Endrin ketone	NA	NA	NA	NA	—	—
Heptachlor	NA	NA	NA	1,035.62	ORNL	—
Heptachlor epoxide	5.4	NA	NA	7,481.70	Clemson	ORNL estimation
Isophorone	1.67	NA	NA	10.94	Knox, Sabatini & Canter 1993	ORNL estimation
gamma-BHC (Lindane)	NA	NA	NA	395.55	ORNL	—
Methoxychlor	4.4	NA	NA	1,300.17	Knox, Sabatini & Canter 1993	ORNL estimation
Radionuclides						
Americium-241	NA	NA	1,000	25	Killough and McKay 1967	—
Cesium-134	NA	NA	5,000	2,800	Higley and Kuperman 1995 (midpoint of range)	—
Cesium-137	NA	NA	5,000	2,800	Higley and Kuperman 1995 (midpoint of range)	—
Plutonium-238	NA	NA	875	120	Higley and Kuperman 1995 (midpoint of range)	—
Plutonium-239/240	NA	NA	875	120	Higley and Kuperman 1995 (midpoint of range)	—
Radium-226	NA	NA	3,000	1,940	Higley and Kuperman 1995 (midpoint of range)	—

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Analyte	Log K_{ow} [1]	Water Solubility	Invertebrate Bioconcentration Factor	Fish Bioconcentration Factor	Source 1	Source 2
Radium-228	NA	NA	3,000	1,940	Higley and Kuperman 1995 (midpoint of range)	—
Strontium-89/90	NA	NA	200	1,204	Higley and Kuperman 1995 (midpoint of range)	—
Tritium	NA	NA	0.9	0.9	Higley and Kuperman 1995 (midpoint of range)	—
Uranium-233/234	NA	NA	16	7.5	Higley and Kuperman 1995 (midpoint of range)	—
Uranium-235	NA	NA	16	7.5	Higley and Kuperman 1995 (midpoint of range)	—
Uranium-238	NA	NA	16	7.5	Higley and Kuperman 1995 (midpoint of range)	—
Semivolatile Organic Compounds						
1,2,4-Trichlorobenzene	4.11	NA	NA	782.71	Knox, Sabatini & Canter 1993	ORNL estimation
1,2-Dichloroethane	NA	NA	NA	7.85	ORNL	—
1,4-Dichlorobenzene	NA	NA	NA	37.50	Clemson	Ambient water quality criteria for dichlorobenzene. EPA440/5-80-039
2-Chlorophenol	NA	NA	NA	134.00	Clemson	EPA440/5-80-034.
2-Methylphenol (o-cresol)	NA	NA	NA	17.86	ORNL	—
2-Methylnaphthalene	4.11	NA	NA	782.71	Knox, Sabatini & Canter 1993	ORNL estimation
2,4-Dimethylphenol	2.42	NA	NA	40.66	Knox, Sabatini & Canter 1994	ORNL estimation
4-Methylphenol (p-cresol)	1.97	NA	NA	18.50	Clemson	ORNL estimation
4-Nitroanaline	1.37	0.8 g/l	NA	16.10	Clemson	ORNL formula
Acenaphthene	NA	NA	NA	119.00	Clemson	Ambient Water Quality for PAHs EPA 440/5-80-069. 1980.
Acenaphthylene	4.07	NA	NA	729.79	Knox, Sabatini & Canter 1993	ORNL estimation
Anthracene	NA	NA	NA	478.00	Clemson	Ambient Water Quality for PAHs EPA 440/5-80-069. 1980.
Benzo(a)anthracene	NA	NA	NA	4,620.00	Clemson	Ambient Water Quality for PAHs EPA 440/5-80-069. 1980.
Benzo(a)pyrene	NA	NA	NA	25,468.30	ORNL	—
Benzo(b)fluoranthene	NA	NA	NA	11,100.00	Clemson	Ambient Water Quality for PAHs EPA 440/5-80-069. 1980
Benzo(ghi)perylene	7.1	NA	NA	146,554.78	Knox, Sabatini & Canter 1993	ORNL estimation
Benzo(k)fluoranthene	NA	NA	NA	11,100.00	Clemson	Ambient Water Quality for PAHs EPA 440/5-80-069. 1980.
Benzoic acid	1.88	NA	NA	15.81	Knox, Sabatini & Canter 1993	ORNL estimation
Benzyl alcohol	1.1	NA	NA	4.04	Knox, Sabatini & Canter 1994	ORNL estimation
Bis(2-chloroisopropyl)ether	2.58	NA	NA	53.80	Knox, Sabatini & Canter 1995	ORNL estimation
Bis(2-ethylhexyl)phthalate	NA	NA	NA	4,504.00	ORNL	—
Butyl benzyl phthalate	NA	NA	NA	414.00	Clemson	Ambient Water Quality for Phthalate esters. EPA 440/5-80-067. 1980
Chrysene	NA	NA	NA	4,620.00	Clemson	Ambient Water Quality for PAHs EPA 440/5-80-069. 1980.
Di-N-butyl phthalate	NA	NA	NA	810.59	ORNL	—
Di-N-octyl phthalate	NA	NA	NA	130.00	Clemson	Ambient Water Quality for Phthalate esters. EPA 440/5-80-067. 1980
Dibenzo(ah)anthracene	6.36	NA	NA	40,142.09	Knox, Sabatini & Canter 1993	ORNL estimation
Dibenzofuran	4.17	NA	NA	869.36	ORNL	ORNL estimation
Diethyl phthalate	NA	NA	NA	44.38	ORNL	—
Fluoranthene	NA	NA	NA	1,150.00	Clemson	Ambient Water Quality for PAHs EPA 440/5-80-069. 1980.
Fluorene	NA	NA	NA	282.00	Clemson	Ambient Water Quality for PAHs EPA 440/5-80-069. 1980.
Hexachlorobutadiene	NA	NA	NA	2.78	Clemson	Ambient Water Quality Criteria for Hexachlorobutadiene. EPA 440/5-80-053. 1980.

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Bioconcentration Factors

Analyte	Log K_{ow}[1]	Water Solubility	Invertebrate Bioconcentration Factor	Fish Bioconcentration Factor	Source 1	Source 2
Hexachloroethane	3.58	NA	NA	309.60	Knox, Sabatini & Canter 1995	ORNL estimation
Indeno(1,2,3-cd)pyrene	7.7	NA	NA	418,793.57	Knox, Sabatini & Canter 1993	ORNL estimation
N-Nitrosodiphenylamine	2.85	NA	NA	86.30	Clemson	ORNL estimation
Napthalene	3.36	NA	NA	210.67	Knox, Sabatini & Canter 1994	ORNL estimation
Pentachlorophenol	5.01	NA	NA	3,781.00	Clemson	ORNL estimation
Phenanthrene	NA	NA	NA	486.00	Clemson	Ambient Water Quality for PAHs EPA 440/5-80-069. 1980.
Phenol	1.5	NA	NA	8.13	Clemson	ORNL estimation
Pyrene	NA	NA	NA	1,100.00	Clemson	Ambient Water Quality for PAHs EPA 440/5-80-069. 1980.
Volatile Organic Compounds						
1,1-Dichloroethane	1.79	NA	NA	13.50	Knox, Sabatini & Canter 1993	ORNL estimation
1,1,1-Trichloroethane	NA	NA	NA	45.96	ORNL	—
1,1,2,2-Tetrachlorethane	2.56	NA	NA	51.95	Knox, Sabatini & Canter 1993	ORNL estimation
1,1-Dichloroethene	NA	NA	NA	24.48	ORNL	—
1,2-Dichloroethane	1.48	NA	NA	7.58	Clemson	ORNL estimation
1,2-Dichloroethene	NA	NA	NA	15.26	ORNL	—
1,3-Dichloropropene	1.41	NA	NA	6.94	Knox, Sabatini & Canter 1993	ORNL estimation
2-Butanone	0.28	NA	NA	0.96	Knox, Sabatini & Canter 1993	ORNL estimation
2-Chloroethyl vinyl ether	1.28	6 g/l	NA	4.57	Clemson	ORNL estimation
4-Methyl-2-pentanone	NA	NA	NA	4.72	ORNL	—
Acetone	NA	NA	NA	0.39	ORNL	—
Benzene	NA	NA	NA	24.48	ORNL	—
Carbon disulfide	2	NA	NA	19.50	Clemson	ORNL estimation
Carbon tetrachloride	NA	NA	NA	83.30	ORNL	—
Chloroethane	1.43	NA	NA	7.19	Knox, Sabatini & Canter 1993	ORNL estimation
Chloromethane	NA	NA	NA	NA	NA	—
Chlorobenzene	2.84	NA	NA	84.80	Knox, Sabatini & Canter 1993	ORNL estimation
Chloroform	2	NA	NA	18.50	ORNL	Clemson
1,3-Dichloropropane[2]	2.28	NA	NA	31.83	Knox, Sabatini & Canter 1993	ORNL estimation
Ethyl benzene	3.13	NA	NA	140.86	Knox, Sabatini & Canter 1993	ORNL estimation
Methylene chloride	NA	NA	NA	5.25	ORNL	—
Styrene	3.16	0.31 g/l	NA	24.30	Clemson	ORNL estimation
Tetrachloroethene	3.4	NA	NA	225.94	Clemson	ORNL estimation
Toluene	NA	NA	NA	69.95	ORNL	—
Total xylenes	NA	NA	NA	159.22	ORNL	—
trans-1,2-Dichloroethene	2.06	NA	NA	21.66	Clemson	ORNL estimation
Trichloroethene	NA	NA	NA	40.66	ORNL	—
Vinyl acetate	0.73	NA	NA	2.11	Knox, Sabatini & Canter 1993	ORNL estimation
Vinyl chloride	NA	NA	NA	6.36	ORNL	—
Water Quality Parameters						
Cyanide	NA	NA	NA	NA	ORNL	—
Nitrate	NA	NA	NA	NA	—	—
Nitrite	NA	NA	NA	NA	—	—

[1]Log K_{ow}s are from Hull and Suter (1994) or Knox, Sabatini and Canter (1993)
[2]Used 1,2-Dichloropropane
Fish BCFs were used for invertebrate BCFs where no invertebrate BCFs were available
Calculated BCFs used one of two equations: $\log BCF = 0.76 \log K_{ow}$
$\log BCF = 2.791 - 0.564 \times \log(\text{water solubility})$

NA - not applicable
ORNL - Opresko *et al.* 1994
AQUIRE - Aquatic Information Retrieval from EPA

Attachment 1
Table 2
Octanol Water Partition Coefficients (log K_{ow})
and Transfer Coefficients (B Factors)
Used to Estimate Vegetation Exposure Point Concentrations

Analyte	Group	log K_{ow}[1]	B Factor
4,4'-DDT	P	6.19	0.010237172
Aldrin	P	5.52	0.024971234
alpha-BHC	P	3.77	0.256412976
Aroclor-1248	P	6.11	0.01138728
Aroclor-1254	P	6.47	0.00705245
Aroclor-1260	P	6.91	0.00392663
delta-BHC	P	4.14	0.15670397
Dieldrin	P	4.53	0.093252396
Endosulfan sulfate	P	3.66	0.296838344
Endrin ketone	P	NA	NA
gamma-BHC (Lindane)	P	3.7	0.281449188
Heptachlor	P	4.4	0.110866414
Heptachlor epoxide	P	3.65	0.300815354
Methoxychlor	P	4.4	0.110866414
1,2,3-Trichlorobenzene	S	NA	NA
1,2,4-Trichlorobenzene	S	4.11	0.163087246
1,2,4-Trimethylbenzene	S	NA	NA
1,2-Dibromo-3-chloropropane	S	NA	NA
1,3,5-Trimethylbenzene	S	NA	NA
1,3-Dichlorobenzene	S	3.38	0.430883635
1,4-Dichlorobenzene	S	3.39	0.425187022
2-Chlorophenol	S	2.15	2.214623989
2-Methylnaphthalene	S	4.11	0.163087246
2-Methylphenol	S	1.93	2.96797337
4-Methylphenol	S	1.92	3.007737981
4-Nitroaniline	S	1.39	6.089477077
Acenaphthene	S	4.13	0.158803474
Acenaphthylene	S	4.07	0.172004576
Anthracene	S	4.45	0.103728954
Benzo(a)anthracene	S	5.9	0.015059134
Benzo(a)pyrene	S	6	0.013182567
Benzo(b)fluoranthene	S	6.57	0.006173622
Benzo(ghi)perylene	S	7.1	0.003049299
Benzo(k)fluoranthene	S	6.85	0.004253045
Benzoic acid	S	1.88	3.172195904
Benzyl alcohol	S	1.1	8.957771912
Bis(2-chloroisopropyl)ether	S	2.58	1.249568302
Bis(2-ethylhexyl)phthalate	S	4.65	0.079487713
Butyl benzyl phthalate	S	4.78	0.066859019
Chrysene	S	5.61	0.02215236
Di-N-butyl phthalate	S	4.57	0.08841786
Di-N-octyl phthalate	S	9.2	0.00018638
Dibenzo(ah)anthracene	S	6.36	0.00816432
Dibenzofuran	S	4.17	0.150570537
Diethyl phthalate	S	2.35	1.697070952

Attachment 1
Table 2
Octanol Water Partition Coefficients (log K_{ow})
and Transfer Coefficients (B Factors)
Used to Estimate Vegetation Exposure Point Concentrations

Analyte	Group	log K_{ow}[1]	B Factor
Fluoranthene	S	5.22	0.037225454
Fluorene	S	4.18	0.148579879
Hexachlorobutadiene	S	4.78	0.066859019
Hexachloroethane	S	3.58	0.330187023
Indeno(1,2,3-cd)pyrene	S	7.7	0.001372145
Isophorone	S	1.67	4.195077612
N-Nitrosodiphenylamine	S	3.13	0.600979973
Naphthalene	S	3.36	0.442506852
o-Chlorotoluene	S	NA	NA
p-Chlorotoluene	S	NA	NA
Pentachlorophenol	S	5.01	0.049228885
Phenanthrene	S	4.52	0.094501782
Phenol	S	1.46	5.547789829
Pyrene	S	5.09	0.044256799
1,1,1,2-Tetrachloroethane	V	NA	NA
1,1,1-Trichloroethane	V	2.47	1.446571818
1,1,2,2-Tetrachloroethane	V	2.56	1.283275787
1,1,2-Trichloroethane	V	2.18	2.127943046
1,1-Dichloroethane	V	1.79	3.575855824
1,1-Dichloroethene	V	1.84	3.345646102
1,1-Dichloropropene	V	NA	NA
1,2,3-Trichloropropane	V	NA	NA
1,2-Dibromoethane	V	NA	NA
1,2-Dichloroethane	V	1.48	5.402067419
1,2-Dichloropropane	V	2.28	1.862773281
1,3-Dichloropropane	V	NA	NA
2-Butanone	V	0.28	26.67841353
2-Chloroethyl vinyl ether	V	1.28	7.049527353
2-Hexanone	V	1.38	6.171063282
4-Methyl-2-pentanone	V	1.09	9.077787245
Acetone	V	-0.24	53.29911526
Benzene	V	2.12	2.304835848
Bromobenzene	V	NA	NA
Bromochloromethane	V	NA	NA
Bromodichloromethane	V	1.88	3.172195904
Bromoform	V	2.34	1.719808139
Bromomethane	V	1.1	8.957771912
Carbon disulfide	V	2	2.703958364
Carbon tetrachloride	V	2.78	0.95754678
Chlorobenzene	V	2.84	0.884056456
Chloroethane	V	1.43	5.773776918
Chloroform	V	1.9	3.088872627
Chloromethane	V	0.9	11.68960941
cis-1,2-Dichloroethene[2]	V	1.9	3.088872627
cis-1,3-Dichloropropene	V	1.41	5.929526304

Attachment 1
Table 2
Octanol Water Partition Coefficients (log K_{ow})
and Transfer Coefficients (B Factors)
Used to Estimate Vegetation Exposure Point Concentrations

Analyte	Group	log K_{ow}[1]	B Factor
Dibromochloromethane	V	2.08	2.430860295
Dibromomethane	V	NA	NA
Dichlorodifluoromethane	V	2.16	2.185344956
Ethylbenzene	V	3.13	0.600979973
m+p-Xylene[3]	V	3.19	0.554855634
m-Xylene	V	3.2	0.547520015
Methylene chloride	V	1.3	6.864359179
N-Butylbenzene	V	NA	NA
o-Xylene	V	2.95	0.763659924
p-Cymene	V	NA	NA
p-Xylene	V	3.18	0.562289534
sec-Butylbenzene	V	NA	NA
Styrene	V	3.16	0.577457465
tert-Butylbenzene	V	NA	NA
Tetrachloroethene	V	3.6	0.321514082
Toluene	V	2.65	1.138413402
Total xylenes (metals)	V	3.2	0.547520015
trans-1,2-Dichloroethene	V	2.09	2.398722451
trans-1,3-Dichloropropene	V	1.41	5.929526304
Trichloroethene	V	2.53	1.335549534
Trichlorofluoromethane	V	2.53	1.335549534
Vinyl acetate	V	0.73	14.65750328
Vinyl chloride	V	0.6	17.4260919
2,4-Dimethylphenol		2.42	1.546108615

[1]Log K_{ow} are from Hull and Suter (1994) or Knox, Sabatini, and Canter (1993).
[2]Log K_{ow} is the average of the cis and trans isomers.
[3]Log K_{ow} is the average for both isomers.
NA - not applicable

Attachment 1
Table 3
Soil Ingestion Rates[1]

Receptor	Reference Species[2]	Proportion of Soil in Diet[3] (dry weight)	Total Dietary Ingestion Rate (kg/kg/day)	Soil Ingestion Rate (kg/kg/day)
Preble's Meadow Jumping Mouse	Meadow Vole	0.024	0.17	0.004
American Kestrel	Red Fox	0.028	0.29	0.008
Great Blue Heron	Blue-winged Teal	0.02	0.18	0.004
Mallard	Mallard	0.02	0.052	0.001
Coyote	Red Fox	0.028	0.047	0.001
Mule Deer	Meadow Vole	0.024	0.022	0.001
Red-tailed Hawk	Red Fox	0.028	0.098	0.003

[1]Soil ingestion rates were estimated by multiplying the proportion of soil in the diet (EPA 1993) by the total dietary ingestion rate (DOE 1995b).
[2]Where data for receptor species were not available, information on the proportion of soil in the diet of similar "reference" species was used to calculate soil ingestion rates.
[3]Proportions reported at less than a value (i.e., <.02) were considered equal to that value for soil ingestion rate calculations.

Attachment 1
Table 4
Land Area and Length of Streams and Ditches Contained Within Source Areas

Source Area	Area (hectares)	Length of Streams and Ditches Within Source Area (meters)
OU1 881 Hillside	22.303	1,633.339
OU2 903 Pad	27.605	833.372
OU2 East Trenches	39.861	—
OU2 Mound Area	2.256	—
OU4 Downgradient	6.370	400.373
OU5 Ash Pits	19.080	788.141
OU5 C-Ponds	12.759	1,453.193
OU5 Old Landfill	13.532	1,206.800
OU5 Surface Disturbance	1.660	—
OU6 A-Ponds	12.828	1,135.220
OU6 B-Ponds	8.473	816.220
OU6 Burial Trenches	1.040	—
OU6 North Spray Field	4.397	—
OU6 Soil Dump Areas	18.038	—
OU7 Downgradient Areas	2.764	—
OU10 Other Outside Closures	2.690	—
OU11 West Spray Field	45.953	—

Attachment 1

Table 5

Area and Perimeter of Ponds in RFETS and Vicinity

Lake/Pond	Area (hectares)	Perimeter (meters)
Pond A-1	0.365	266.084
Pond A-2	0.570	375.458
Pond A-3	1.142	562.765
Pond A-4	1.086	763.180
Pond A-5	0.144	378.146
Total A1-5	**3.307**	**2,345.633**
Pond B-1	0.106	141.962
Pond B-2	0.314	275.341
Pond B-3	0.171	188.351
Pond B-4	0.109	153.510
Pond B-5	0.875	550.526
Total B1-5	**1.575**	**1,309.690**
Pond C-1	0.316	266.321
Pond C-2	1.560	762.370
Total C1-2	**1.876**	**1,028.691**
Pond D-1	1.259	485.497
Pond D-2	2.421	619.755
Total D1-2	**3.680**	**1,105.252**
OU7 Landfill Pond	0.962	534.575
Rocky Flats Lake	15.546	1,522.708

Attachment 1
Table 6
Site Use Factor Calculations for American Kestrel

Source Area	Ponds Within Home Range of Source Area[1]	Area of Ponds Within Home Range of Source Area[1] (hectares)	Home Range Minus Ponds[2] (hectares)	Source Area Minus Ponds[3] (hectares)	Food SUF	Soil SUF
OU1 881 Hillside	C-1	0.316	37.684	22.303	0.592	0.027
OU2 903 Pad	C-1	0.316	37.684	27.605	0.733	0.027
OU2 East Trenches	B1-4	NA	NA	39.861	1.000	1.000
OU2 Mound Area	B-1	0.106	37.894	2.256	0.060	0.027
OU4 Downgradient	A1-2	0.935	37.065	6.370	0.172	0.027
OU5 Ash Pits	None	0.000	38.000	19.080	0.502	0.026
OU5 C Ponds	C1-2	1.876	36.124	10.883	0.301	0.028
OU5 Old Landfill	None	0.000	38.000	13.532	0.356	0.026
OU5 Surface Disturbance	C-1	0.316	37.684	1.660	0.044	0.027
OU6 A Ponds	A1-5, B1-5	4.882	33.118	9.521	0.287	0.030
OU6 B Ponds	A1-5, B1-5	4.882	33.118	6.898	0.208	0.030
OU6 Burial Trenches	Landfill	0.962	37.038	1.040	0.028	0.027
OU6 North Spray Field	Landfill	0.962	37.038	4.397	0.119	0.027
OU6 Soil Dump Areas	A1-2, B1-4	1.635	36.365	18.038	0.496	0.027
OU7 Downgradient Areas	Landfill	0.962	37.038	2.764	0.075	0.027
OU10 Other Outside Closures	None	0.000	38.000	2.690	0.071	0.026
OU11 West Spray Field	None	NA	NA	45.953	1.000	1.000

[1]Assumes home range is circular and centered around the source area
[2]Home range (DOE 1995b) minus area of ponds within home range of source area
[3]Area of source area minus area of ponds in source area
SUF- site use factor
SUFs for food and soil were calculated as:
(area of source area - area of ponds in source area) / (home range - area of ponds in home range)

Attachment 1
Table 7
Site Use Factor Calculations for Mallard

Source Area	Ponds Within Home Range[1]	Area of Ponds Within Home Range[1] (hectares)	Area of Ponds or Streams in Source Area[2] (hectares)	Source Area Minus Ponds[3] (hectares)	Home Range Minus Ponds[4] (hectares)	Soil SUF	Food SUF	Surface Water SUF	Sediments SUF
OU1 881 Hillside	A1-4, B1-5, C1-2, and Landfill	7.588	0.245	22.303	572.412	0.039	0.000	0.032	0.032
OU2 903 Pad	A1-4, B1-5, C1-2, D-1, and Landfill	8.838	0.125	27.605	571.162	0.048	0.000	0.014	0.014
OU4 Downgradient	A1-4, B1-5, C1-2, and Landfill	7.578	0.060	6.370	572.422	0.011	0.000	0.008	0.008
OU5 Ash Pits	C-1, Rocky Flats Lake	15.862	0.118	19.080	564.138	0.034	0.000	0.007	0.007
OU5 C Ponds	A1-5, B1-5, C1-2, D1-2, and Landfill	11.406	1.876	10.883	568.594	0.019	0.164	0.165	0.165
OU5 Old Landfill	A-1, B1-3, C-1, and Landfill	2.234	0.181	13.532	577.766	0.023	0.000	0.081	0.081
OU6 A Ponds	A1-5, B1-5, C1-2, and Landfill	7.722	3.307	9.521	572.278	0.017	0.428	0.428	0.428
OU6 B Ponds	A1-5, B1-5, C1-2, and Landfill	7.722	1.575	6.862	572.278	0.012	0.204	0.204	0.204

[1]Assumes home range is circular and centered around the source area
[2]For source areas with ponds, only pond areas are used; for source areas without ponds, only stream areas are used (based on an average stream width of 1.5 m); stream lengths are provided in Attachment 1, Table 4
[3]Area of source area (Attachment 1, Table 4) minus area of ponds (if any) in source area
[4]Home range (DOE 1995b) minus area of ponds within home range of source area
SUF - site use factor
SUFs for food, surface water, and sediments for source areas with ponds were calculated as: area of ponds in source area / area of ponds in home range
SUFs for food, surface water, and sediments for source areas without ponds were calculated as:
area of streams in source area / area of ponds in home range
SUFs soils were calculated as: (area of source area - area of ponds in source area) / (home range - area of ponds in home range)

Attachment 1
Table 8
Site Use Factor Calculations for Mule Deer

Source Area	Ponds Within Home Range of Source Area[1]	Area of Ponds Within Home Range of Source Area[1] (hectares)	Home Range Minus Ponds[2] (hectares)	Source Area Minus Ponds[3] (hectares)	Length of Streams and Perimeter of Ponds in Source Area[1,4] (meters)	Food SUF	Soil SUF	Surface Water SUF
OU1 881 Hillside	A-1, B1-3, C1-2	2.832	282.168	22.303	1,633.339	0.079	0.079	0.113
OU2 903 Pad	A1-3, B1-5, C1-2	5.528	279.472	27.605	833.372	0.099	0.099	0.058
OU2 East Trenches	A1-5, B1-5, C1-2	6.758	278.242	39.861	NA	0.143	0.143	NA
OU2 Mound Area	A1-3, B1-5, C1-2	5.528	279.472	2.256	NA	0.008	0.008	NA
OU4 Downgradient	A1-3, B1-5, Landfill	4.614	280.386	6.370	400.373	0.023	0.023	0.028
OU5 Ash Pits	None	NA	285.000	19.080	788.141	0.067	0.067	0.055
OU5 C Ponds	A1-3, B1-5, C1-2	5.528	279.472	10.883	2,481.881	0.039	0.039	0.172
OU5 Old Landfill	C-1	0.316	284.684	13.532	1,206.800	0.048	0.048	0.084
OU5 Surface Disturbance	B1-5, C1-2, D-1	4.710	280.290	1.660	NA	0.006	0.006	NA
OU6 A Ponds	A1-5, B1-5, C1-2, Landfill	7.720	277.280	9.521	3,480.854	0.034	0.034	0.241
OU6 B Ponds	A1-5, B1-5, C1-2, Landfill	7.720	277.280	6.898	2,125.910	0.025	0.025	0.147
OU6 Burial Trenches	A1-3, B1-4, Landfill	3.739	281.261	1.040	NA	0.004	0.004	NA
OU6 North Spray Field	A1-3	2.077	282.923	4.397	NA	0.016	0.016	NA
OU6 Soil Dump Areas	A1-5, B1-5, C1-2, Landfill	7.720	277.280	18.038	NA	0.065	0.065	NA
OU7 Downgradient Areas	A1-3, B1-3, Landfill	4.614	280.386	2.764	NA	0.010	0.010	NA
OU10 Other Outside Closures	Landfill	0.962	284.038	2.690	NA	0.009	0.009	NA
OU11 West Spray Field	None	NA	285.000	45.953	NA	0.161	0.161	NA
				Total (meters)	**12,950.670**			

[1]Assumes home range is circular and centered around the source area
[2]Home range minus area of ponds within home range of source area
[3]Area of source area (Attachment 1, Table 4) minus area of ponds (Attachment 1, Table 5) in source area
[4]From Attachment 1, Tables 4 and 5
NA - not applicable
SUF- site use factor
SUFs for food and soils were calculated as:
(area of source area - area of ponds in source area) / (home range - area of ponds in home range within RFETS boundary)
SUFs for surface water were calculated as:
length of streams and perimeter of ponds within source area / length of streams of ponds within all source areas for which there are surface water samples

Attachment 1
Table 9
Site Use Factor Calculations for Coyote

Source Area	Ponds Within Home Range of Source Area	Area of Ponds Within Home Range [1] (hectares)	Home Range Minus Ponds[2] (hectares)	Source Area Minus Ponds[3] (hectares)	Length of Streams and Perimeter of Ponds in Source Area[1,4] (meters)	Food SUF	Soil SUF	Surface Water SUF
OU1 881 Hillside	A1-5, B1-5, C1-2, D1-2, Landfill	11.400	1,118.600	22.303	1,633.339	0.020	0.020	0.113
OU2 903 Pad	A1-5, B1-5, C1-2, D1-2, Landfill	11.400	1,118.600	27.605	833.372	0.025	0.025	0.058
OU2 East Trenches	A1-5, B1-5, C1-2, D1-2, Landfill	11.400	1,118.600	39.861	—	0.036	0.036	—
OU2 Mound Area	A1-5, B1-5, C1-2, D1-2, Landfill	11.400	1,118.600	2.256	—	0.002	0.002	—
OU4 Downgradient	A1-5, B1-5, C1-2, Landfill	7.720	1,122.280	6.370	400.373	0.006	0.006	0.028
OU5 Ash Pits	A1-2, B1-4, C1-2, Landfill, RFL	20.019	1,109.981	19.080	788.141	0.017	0.017	0.055
OU5 C Ponds	A1-5, B1-5, C1-2, D1-2, Landfill	11.400	1,118.600	10.883	2,481.881	0.010	0.010	0.172
OU5 Old Landfill	A1-5, B1-5, C1-2, D-1, Landfill, RFL	21.278	1,108.722	13.532	1,206.800	0.012	0.012	0.084
OU5 Surface Disturbance	A1-5, B1-5, C1-2, D1-2, Landfill	11.400	1,118.600	1.660	—	0.001	0.001	—
OU6 A Ponds	A1-5, B1-5, C1-2, Landfill	7.378	1,122.622	9.521	3,480.854	0.008	0.008	0.241
OU6 B Ponds	A1-5, B1-5, C1-2, D1-2, Landfill	11.400	1,118.600	6.898	2,125.910	0.006	0.006	0.147
OU6 Burial Trenches	A1-5, B1-5, C1-2, Landfill	7.378	1,122.622	1.040	—	0.001	0.001	—
OU6 North Spray Field	A1-5, B1-5, C1-2, Landfill	7.378	1,122.622	4.397	—	0.004	0.004	—
OU6 Soil Dump Areas	A1-5, B1-5, C1-2, D-1, Landfill	5.732	1,124.268	18.038	—	0.016	0.016	—
OU7 Downgradient Areas	A1-5, B1-5, C1-2, Landfill	7.378	1,122.622	2.764	—	0.002	0.002	—
OU10 Other Outside Closures	A1-5, B1-5, C1-2, Landfill	7.378	1,122.622	2.690	—	0.002	0.002	—
OU11 West Spray Field	B-1, C-1, Landfill, RFL	15.968	1,114.032	45.953	—	0.041	0.041	—
				Total (meters)	**14,423.075**			

[1]Assumes home range is circular and centered around the source area
[2]Home range minus area of ponds within home range of source area
[3]Area of source area (Attachment 1, Table 4) minus area of ponds (Attachment 1, Table 5) in source area
[4]From Attachment 1, Tables 4 and 5
RFL - Rocky Flats Lake
SUF - site use factor
SUFs for food and soils were calculated as:
(area of source area - area of ponds in source area) / (home range - area of ponds in home range within RFETS boundary)
SUFs for surface water were calculated as:
length of streams and perimeter of ponds within source area / length of streams of ponds within all source areas for which there are surface water samples

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Attachment 2
Toxicity Reference Values

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Compound:	Acenaphthene
Form:	Not applicable
Reference:	EPA. 1989. Mouse oral subchronic study with acenaphthene. Study conducted by Hazelton Laboratories, Inc., for the Office of Solid Waste, Washington, DC.
Test Species:	Mice Body weight: 0.3 kg
Study Duration:	90 days
Endpoint:	Hepatotoxicity
Exposure Route:	Gavage (adults)
Dosage:	1, 175, 350, and 700 mg/kg/day
Calculations:	NOAEL = 175 mg/kg/day
Comments:	None
Final NOAEL:	175 mg/kg/day

Compound:	Acenaphthene
Form:	Not applicable
Reference:	Brunstrom, B., et al. 1990. Embryotoxicity of polycyclic aromatic hydrocarbons (PAHs) in three domestic avian species, and of PAHs and coplanar polychlorinated biphenyls (PCBs) in the common eider. Environmental Pollution 67:133–143.
Test Species:	Chick embryo Body weight: 0.058 kg (Brunstrom et al. 1990) Food consumption: 0.008 kg/day (Brunstrom et al. 1990)
Study Duration:	18 days
Endpoint:	Mortality
Exposure Route:	Injection into egg
Dosage:	Not applicable
Calculations:	TEF = 0.001 0.03310 mg/kg/day / 0.001 = 33.10 mg/kg/day
Comments:	Assumptions: (1) concentration in adults is equivalent to concentration in eggs, (2) chemical does not accumulate in adults, (3) eggs laid - 1/day, and (4) no activation of chemical. TEF (toxic equivalence factor) (EPA 1993, Nisbet and LaGoy 1992) used to adjust benzo[a]pyrene NOAEL to acenaphthene NOAEL.
Final NOAEL:	33.10 mg/kg/d

Compound:	Acenaphthylene
Form:	Not applicable
Reference:	Mackenzie, K.M., and D.M. Angevine. 1981. Infertility in mice exposed in utero to benzo[a]pyrene. Biol. Reprod. 24:183-191.
Test Species:	Mouse Body weight: 0.03 kg (EPA 1988) Food consumption: 0.0055 (ORNL 1994)
Study Duration:	days 7–16 of gestation (during a critical life stage = chronic)
Endpoint:	Reproduction
Exposure Route:	Oral intubation
Dosage:	Three dose levels: 10, 40, and 160 mg/kg/day; LOAEL = 10 mg/kg/day
Calculations:	TEF = 0.001

	NOAEL = 10 mg/kg/day / 10 (LOAEL to NOAEL) = 1.0 mg/kg/day / 0.001 = 1000 mg/kg/day
Comments:	The above information is for benzo[a]pyrene. TEF (toxic equivalence factor) (EPA 1993, Nisbet and LaGoy 1992) used to adjust benzo[a]pyrene NOAEL to benzo[a]anthracene NOAEL. See comments for benzo[a]pyrene in ORNL (1994).
Final NOAEL:	1000 mg/kg/day

Compound:	Acetone
Form:	Not applicable
Reference:	McLaughlin, J., et al. 1965. Toxicity of fourteen volatile chemicals as measured by the chick embryo method. American Industrial Hygiene Journal, 25: 282–284
Test Species:	Chicken Egg weight: 0.05 kg Food consumption: 0.008 kg/day (ORNL 1994)
Study Duration:	Preincubation-hatch (single dose)
Endpoint:	Hatching success
Exposure Route:	Egg injection
Dosage:	780 and 1560 mg/kg egg
Calculations:	780 mg/kg/day x 0.1 (LOAEL to NOAEL) = 78 mg/kg/day
Comments:	Assumptions for these calculations are as follows: (1) concentrations in adult are the same as in the egg, (2) chemical does not accumulate in the adult, and (3) eggs were laid 1/day. Values were extrapolated from single exposure.
Final NOAEL:	78.0 mg/kg/day

Compound:	Aldrin
Form:	Dieldrin
Reference:	Mendenhall, V.M., et al. 1983. Breeding success of barn owls (*Tyto alba*) fed low levels of DDE and dieldrin. Arch. Environ. Contam. Toxicol. 12:235-240.
Test Species:	Barn Owl Body weight: 0.466 kg (Johnsgard 1988) Food consumption: wild birds 100-150 g/d; 50-75 g/d captive (Johnsgard 1988) Used median captive food consumption value: 62.5 g/d
Study Duration:	2 years (>10 weeks and during a critical lifestage = chronic)
Endpoint:	Reproduction
Exposure Route:	Oral in diet
Dosage:	Only one dose level applied: 0.58 ppm NOAEL
Calculations:	(0.58 mg dieldrin/kg) (62.5 g food/day) (1 kg/1000 g) /0.466 kg BW = 0.077 mg/kg/d
Comments:	Dieldrin values were extrapolated to aldrin. While 0.58 ppm dieldrin in the diet produced a slight but significant reduction in eggshell thickness, no significant effects on number of eggs laid/pair, number of eggs hatched/pair, percent eggs broken, embryo or nesting mortality was observed. Therefore, this dose was considered to be a chronic NOAEL.
Final NOAEL:	0.077 mg/kg/d

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Compound:	Anthracene
Form:	Not applicable
Reference:	EPA. 1989. Subchronic toxicity study in mice with anthracene. Final report. Hazelton Laboratories America, Inc. Prepared for the Office of Solid Waste, Washington, DC.
Test Species:	Mice Body weight: 0.03 kg (ORNL 1994)
Study Duration:	at least 90 days
Endpoint:	No treatment-related effects were observed.
Exposure Route:	Gavage (adults)
Dosage:	0, 250, 500, and 1000 mg/kg/day
Calculations:	Not applicable
Comments:	The highest tested dose is the NOAEL.
Final NOAEL:	1000 mg/kg/day

Compound:	Anthracene
Form:	Not applicable
Reference:	Brunstrom, B., et al. 1990. Embryotoxicity of polycyclic aromatic hydrocarbons (PAHs) in three domestic avian species, and of PAHs and coplanar polychlorinated biphenyls (PCBs) in the common eider. Environmental Pollution 67:133–143
Test Species:	Chick embryo Body weight: 0.058 kg (Brunstrom et al. 1990) Food consumption: 0.008 kg/day (Brunstrom et al. 1990)
Study Duration:	18 days
Endpoint:	Mortality
Exposure Route:	Injection into egg
Dosage:	2.0 mg/kg/egg
Calculations:	2.0 mg/kg/egg x 0.0096 kg embryo wt. = 0.0192 mg/egg x 1 egg / 0.058 = 0.3310 mg/kg/day
Comments:	No effects at this dose (highest dose). Assumptions: (1) concentration in adults is equivalent to concentration in eggs, (2) chemical does not accumulate in adults, (3) eggs laid - 1/day, and (4) no activation of chemical.
Final NOAEL:	0.3310 mg/kg/day

Compound:	Aroclor-1248
Form:	Aroclor-1254
Reference:	Dahlgren, R.B., et al. 1972. Polychlorinated biphenyls: their effects on penned pheasants. Environ. Health. Perspect. 1:89–101.
Test Species:	Ring-necked Pheasant Body weight: 1 kg (EPA 1993)
Study Duration:	17 weeks (>10 wks and during a critical lifestage = chronic)
Endpoint:	Reproduction
Exposure Route:	Weekly oral dose via gelatin capsule
Dosage:	Two dose levels: 12.5 and 50 mg/bird/week; LOAEL = 12.5 mg/bird/week
Calculations:	12.5 mg/bird/week = 1.8 mg/kg/day

Comments:	Aroclor-1254 values were extrapolated to Aroclor-1248. Significantly reduced hatchability was observed in both treatment groups. Therefore, because the study considered exposure throughout a critical lifestage (reproduction), the 12.5 mg/bird/week dose was considered to be a chronic LOAEL.
Final NOAEL:	0.18 mg/kg/d

Compound:	Aroclor-1260
Form:	Not applicable
Reference:	Linder, R.E., et al. 1974. The effect of polychlorinated biphenyls on hepatic microsomal enzymes in the rat. Food Cosmet Toxicol 12:63–77.
Test Species:	Rat Body weight: 0.35 kg (ORNL 1994) Food consumption: 0.028 kg/day (ORNL 1994)
Study Duration:	67 days (<1 yr and during a critical lifestage=chronic)
Endpoint:	Litter size
Exposure Route:	Dietary
Dosage:	Could not obtain primary reference
Calculations:	Not applicable
Comments:	Considered chronic because the rats were exposed during gestation.
Final NOAEL:	6.9 mg/kg/day

Compound:	Aroclor-1260
Form:	Not applicable
Reference:	Hill, E.F., and M.B. Camardese. 1986. Lethal dietary toxicities of environmental contaminants and pesticides to coturnix. USFWS Technical Report 2. Washington, DC.
Test Species:	Coturnix Body weight: 0.090 kg (Dunning 1993) Food consumption: 0.012 (from study controls)
Study Duration:	5 days; subacute
Endpoint:	Death
Exposure Route:	Dietary
Dosage:	Six concentrations ranging from 1500 to 3848 ppm; LOAEL = 1500 ppm
Calculations:	(1500 mg/kg) (0.012 kg/day)/0.09 kg BW x 0.01 UF = 2.0 mg/kg/d
Comments:	LOAEL was taken from lowest dose resulting in mortality, which in this study was the lowest concentration tested.
Final NOAEL:	2.0 mg/kg/d

Compound:	Benzene
Form:	Not applicable
Reference:	McLaughlin, J., et al. 1965. Toxicity of fourteen volatile chemicals as measured by the chick embryo method. American Industrial Hygiene Journal, 25: 282–284
Test Species:	Chicken Body weight: 0.058 Food consumption: 0.008
Study Duration:	Preincubation-hatch (single dose)

Endpoint:	Hatchability
Exposure Route:	Egg injection
Dosage:	75.9, 151.7, 303.4, 775.9 mg/kg egg
Calculations:	75.9 mg/kg/day x 0.1 (LOAEL to NOAEL) =7.59 mg/kg/day
Comments:	Assumptions: (1) concentration in adults is equivalent to concentration in eggs, (2) chemical does not accumulate in adults, (3) eggs laid - 1/day, and (4) no activation of chemical.
Final NOAEL:	7.59 mg/kg/day

Compound:	Benzo[a]anthracene
Form:	Not applicable
Reference:	Mackenzie, K.M., and D.M. Angevine. 1981. Infertility in mice exposed in utero to benzo[a]pyrene. Biol. Reprod. 24:183–191.
Test Species:	Mouse Body weight: 0.03 kg (EPA 1988) Food consumption: 0.0055 (ORNL 1994)
Study Duration:	Days 7–16 of gestation (during a critical life stage = chronic)
Endpoint:	Reproduction
Exposure Route:	Oral intubation
Dosage:	Three dose levels: 10, 40, and 160 mg/kg/day; LOAEL = 10 mg/kg/day
Calculations:	TEF = 0.1 NOAEL = 10 mg/kg/day / 10 (LOAEL to NOAEL) = 1.0 mg/kg/day / 0.1 = 10 mg/kg/day
Comments:	The above information is for benzo[a]pyrene. TEF (toxic equivalence factor) (EPA 1993, Nisbet and LaGoy 1992) used to adjust benzo[a]pyrene NOAEL to benzo[a]anthracene NOAEL. See comments for benzo[a]pyrene in ORNL (1994).
Final NOAEL:	10 mg/kg/day

Compound:	Benzo[a]anthracene
Form:	Not applicable
Reference:	Brunstrom, B., et al. 1990. Embryotoxicity of polycyclic aromatic hydrocarbons (PAHs) in three domestic avian species, and of PAHs and coplanar polychlorinated biphenyls (PCBs) in the common eider. Environmental Pollution 67:133–143.
Test Species:	Chick embryos Body weight: 0.058 kg (Brunstrom et al. 1990) Food consumption: 0.008 kg/day (Brunstrom et al. 1990)
Study Duration:	18 days
Endpoint:	Mortality
Exposure Route:	Injection into egg
Dosage:	2.0 mg/kg/day = NOAEL
Calculations:	2.0 mg/kg/egg x 0.0096 kg embryo wt. = 0.0192 mg/egg x 1 egg/day / 0.058 kg = 0.3310 mg/kg/day
Comments:	Assumptions: (1) concentration in adults is equivalent to concentration in eggs, (2) chemical does not accumulate in adults, (3) eggs laid - 1/day, and (4) no activation of chemical.
Final NOAEL:	0.3310 mg/kg/day

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Compound:	Benzo[a]pyrene
Form:	Not applicable
Reference:	Brunstrom, B., et al. 1990. Embryotoxicity of polycyclic aromatic hydrocarbons (PAHs) in three domestic avian species, and of PAHs and coplanar polychlorinated biphenyls (PCBs) in the common eider. Environmental Pollution 67:133–143
Test Species:	Chick embryos Body weight: 0.058 kg (Brunstrom et al., 1990) Food consumption: 0.008 kg/day (Brunstrom et al., 1990)
Study Duration:	18 days
Endpoint:	Mortality
Exposure Route:	Injection into egg
Dosage:	2.0 mg/kg/egg = LOAEL
Calculations:	2.0 mg/kg/egg = LOAEL x 0.0096 kg embryo wt. = 0.0192 mg/egg x 1 egg / 0.058 = 0.3310 mg/kg LOAEL to NOAEL: 0.3310 mg/kg/day x 0.1 = 0.033
Comments:	Assumptions: (1) concentration in adults is equivalent to concentration in eggs, (2) chemical does not accumulate in adults, (3) eggs laid - 1/day, and (4) no activation of chemical.
Final NOAEL:	0.0331 mg/kg/day

Compound:	Benzo[b]fluoranthene
Form:	Not applicable
Reference:	Mackenzie, K.M., and D.M. Angevine. 1981. Infertility in mice exposed in utero to benzo[a]pyrene. Biol. Reprod. 24:183–191.
Test Species:	Mouse Body weight: 0.03 kg (EPA 1988) Food consumption: 0.0055 (ORNL 1994)
Study Duration:	Days 7–16 of gestation (during a critical life stage = chronic)
Endpoint:	Reproduction
Exposure Route:	Oral intubation
Dosage:	Three dose levels: 10, 40, and 160 mg/kg/day; LOAEL = 10 mg/kg/day
Calculations:	TEF = 0.1 NOAEL = 10 mg/kg/day / 10 (LOAEL to NOAEL) = 1.0 mg/kg/day / 0.1 = 10 mg/kg/day
Comments:	The above information is for benzo[a]pyrene. TEF (toxic equivalence factor) (EPA 1993, Nisbet and LaGoy 1992) used to adjust benzo[a]pyrene NOAEL to benzo[b]fluoranthene NOAEL. See comments for benzo[a]pyrene in ORNL (1994).
Final NOAEL:	10 mg/kg/day

Compound:	Benzo[b]fluoranthene
Form:	Not applicable
Reference:	Brunstrom, B., et al. 1990. Embryotoxicity of polycyclic aromatic hydrocarbons (PAHs) in three domestic avian species, and of PAHs and coplanar polychlorinated biphenyls (PCBs) in the common eider. Environmental Pollution 67:133–143.
Test Species:	Chick embryos Body weight: 0.058 kg (Brunstrom et al. 1990) Food consumption: 0.008 kg/day (Brunstrom et al. 1990)

Study Duration: 18 days
Endpoint: Mortality
Exposure Route: Injection into egg
Dosage: 2.0 mg/kg/day = NOAEL
Calculations: 2.0 mg/kg/egg x 0.0096 kg embryo wt. = 0.0192 mg/egg x 1 egg/day / 0.058 kg = 0.3310 mg/kg/day
0.03 mg/kg/day / 0.1 TEF = 0.33
Comments: Assumptions: (1) concentration in adults is equivalent to concentration in eggs, (2) chemical does not accumulate in adults, (3) eggs laid - 1/day, and (4) no activation of chemical.
Final NOAEL: 0.33 mg/kg/day

Compound: Benzo[ghi]perylene
Form: Not applicable
Reference: Mackenzie, K.M., and D.M. Angevine. 1981. Infertility in mice exposed in utero to benzo[a]pyrene. Biol. Reprod. 24:183-191.
Test Species: Mouse
Body weight: 0.03 kg (EPA 1988)
Food consumption: 0.0055 (ORNL 1994)
Study Duration: Days 7–16 of gestation (during a critical life stage = chronic)
Endpoint: Reproduction
Exposure Route: Oral intubation
Dosage: Three dose levels: 10, 40, and 160 mg/kg/day;
LOAEL = 10 mg/kg/day
Calculations: TEF = 0.01
NOAEL = 10 mg/kg/day / 10
= 1.0 mg/kg/day / 0.01 = 100 mg/kg/day
Comments: The above information is for benzo[a]pyrene. TEF (toxic equivalence factor) (EPA 1993, Nisbet and LaGoy 1992) used to adjust benzo[a]pyrene NOAEL to benzo[ghi]perylene NOAEL. See comments for benzo[a]pyrene in ORNL (1994).
Final NOAEL: 100 mg/kg/day

Compound: Benzo[ghi]perylene
Form: Not applicable
Reference: Brunstrom, B., et al. 1990. Embryotoxicity of polycyclic aromatic hydrocarbons (PAHs) in three domestic avian species, and of PAHs and coplanar polychlorinated biphenyls (PCBs) in the common eider. Environmental Pollution 67:133–143.
Test Species: Chick embryos
Body weight: 0.058 kg (Brunstrom et al. 1990)
Food consumption: 0.008 kg/day (Brunstrom et al. 1990)
Study Duration: 18 days
Endpoint: Mortality
Exposure Route: Injection into egg
Dosage: 2.0 mg/kg/egg
Calculations: NOAEL = 2.0 mg/kg/egg x 0.0096 kg embryo wt.
= 0.0192 mg/egg x 1 egg/day / 0.058 kg = 0.3310 mg/kg/day
Comments: Assumptions: (1) concentration in adults is equivalent to concentration in eggs, (2) chemical does not accumulate in adults, (3) eggs laid - 1/day, and (4) no activation of chemical.
Final NOAEL: 0.3310 mg/kg/day

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Compound:	Benzo[k]fluoranthene
Form:	Not applicable
Reference:	Mackenzie, K.M., and D.M. Angevine. 1981. Infertility in mice exposed in utero to benzo[a]pyrene. Biol. Reprod. 24:183-191.
Test Species:	Mouse Body weight: 0.03 kg (EPA 1988) Food consumption: 0.0055 (ORNL 1994)
Study Duration:	Days 7–16 of gestation (during a critical life stage = chronic)
Endpoint:	Reproduction
Exposure Route:	Oral intubation
Dosage:	Three dose levels: 10, 40, and 160 mg/kg/day; LOAEL = 10 mg/kg/day
Calculations:	TEF = 0.1 NOAEL = 10 mg/kg/day / 10 (LOAEL to NOAEL) = 1.0 mg/kg/day / 0.1 = 10 mg/kg/day
Comments:	The above information is for benzo[a]pyrene. TEF (toxic equivalence factor) (EPA 1993, Nisbet and LaGoy 1992) used to adjust benzo[a]pyrene NOAEL to benzo[k]fluoranthene NOAEL. See comments for benzo[a]pyrene in ORNL (1994).
Final NOAEL:	10 mg/kg/day

Compound:	Benzo[k]fluoranthene
Form:	Not applicable
Reference:	Brunstrom, B., et al. 1990. Embryotoxicity of polycyclic aromatic hydrocarbons (PAHs) in three domestic avian species, and of PAHs and coplanar polychlorinated biphenyls (PCBs) in the common eider. Environmental Pollution 67:133–143.
Test Species:	Chick embryos Body weight: 0.058 kg (Brunstrom et al. 1990) Food consumption: 0.008 kg/day (Brunstrom et al. 1990)
Study Duration:	18 days
Endpoint:	Mortality
Exposure Route:	Injection into egg
Dosage:	0, 0.05, 0.2, 2.0 mg/kg/egg
Calculations:	NOAEL = 0.2 mg/kg/egg x 0.0096 kg embryo wt. = 0.0019 mg/egg x 1 egg/day / 0.058 kg = 0.033 mg/kg/day
Comments:	Assumptions: (1) concentration in adults is equivalent to concentration in eggs, (2) chemical does not accumulate in adults, (3) eggs laid - 1/day, and (4) no activation of chemical.
Final NOAEL:	0.033 mg/kg/day

Compound:	Benzyl alcohol
Form:	Not applicable
Reference:	Shell Chemical Company. 1986. MRID No. 00077819; HED Doc. No. 002607. Available from EPA. Write to FOI, EPA, Washington, DC 20406.
Test Species:	Beagle dogs Body weight: 12.7 kg (ORNL 1994) Food consumption: 0.301 kg/d (ORNL 1994)
Study Duration:	Two years
Endpoint:	Reduced body weight gain, increased liver and kidney weights
Exposure Route:	Drinking water

Dosage:	0, 25, 125, and 2000 ppm, NOEL = 125 ppm = 3.13 mg/kg/d
Calculations:	None
Comments:	None
Final NOAEL:	3.13 mg/kg/day

Compound:	Bis(2-chloroisopropyl)ether
Form:	Not applicable
Reference:	Mitsumori, K., et al. 1979. Twenty-four month chronic studies of dichlorodiisopropyl ether in mice. Nippon Noyaku Gakkaishi. 4:323–335.
Test Species:	Mice Body weight: 0.03 (ORNL 1994) Food consumption: 0.0055 kg/d (ORNL 1994)
Study Duration:	Two years
Endpoint:	Decreased hemoglobin
Exposure Route:	Oral diet
Dosage:	NOAEL = 35.8 mg/kg/day
Calculations:	None
Comments:	From HEAST.
Final NOAEL:	35.8 mg/kg/day

Compound:	2-Butanone
Form:	Not applicable
Reference:	Cox, G.E., et al. 1975. Toxicity studies in rats with 2-butanol including growth, reproduction, and teratologic observations. Food and Drug Research Laboratories, Inc. Waverly, NY, Report No. 91MR R 1673.
Test Species:	FRDL-Wistar rats Body weight: 0.35 (ORNL 1994) Food consumption: 0.028 kg/d (ORNL 1994)
Study Duration:	Three generations
Endpoint:	Decreased fetal birth weight
Exposure Route:	Oral diet
Dosage:	0, 0.3, 1.0, and 3.0 %; NOAEL = 1771 mg/kg/day
Calculations:	None
Comments:	From IRIS.
Final NOAEL:	35.8 mg/kg/day

Compound:	Butyl benzyl phthalate
Form:	Not applicable
Reference:	Bower, R.K., et al. 1970. Teratogenic effects in the chick embryo caused by esters of phthalic acid. J. Pharmacology and Exp. Theraputics. 171:314–324.
Test Species:	Chick embryo Body weight: 0.058 kg (ORNL 1994) Food consumption: 0.008 kg/day (ORNL 1994)
Study Duration:	Inject at day 3 of incubation
Endpoint:	Mortality
Exposure Route:	Injection into egg
Dosage:	0.05 ml/egg (d20 = 1.12 g/ml Source: Merck Index) (47.0% mortality)

Calculations:	0.05 ml/egg x 1.12 g/ml = 0.056 g / 0.058 kg = 0.965 g/kg x 1000 mg/g = 965 mg/kg 965 mg/kg x 0.01 = 96.55 (LOAEL to NOAEL)
Comments:	None.
Final NOAEL:	96.55 mg/kg/day

Compound:	Chrysene
Form:	Not applicable
Reference:	Mackenzie, K.M., and D.M. Angevine. 1981. Infertility in mice exposed in utero to benzo[a]pyrene. Biol. Reprod. 24:183–191.
Test Species:	Mouse Body weight: 0.03 kg (EPA 1988) Food consumption: 0.0055 (ORNL 1994)
Study Duration:	Days 7–16 of gestation (during a critical life stage = chronic)
Endpoint:	Reproduction
Exposure Route:	Oral intubation
Dosage:	Three dose levels: 10, 40, and 160 mg/kg/day; LOAEL = 10 mg/kg/day
Calculations:	TEF = 0.01 NOAEL = 10 mg/kg/day / 10 = 1.0 mg/kg/day / 0.01 = 100 mg/kg/day
Comments:	The above information is for benzo[a]pyrene. TEF (toxic equivalence factor) (EPA 1993, Nisbet and LaGoy 1992) used to adjust benzo[a]pyrene NOAEL to chrysene NOAEL. See comments for benzo[a]pyrene in ORNL (1994).
Final NOAEL:	100 mg/kg/day

Compound:	Chrysene
Form:	Not applicable
Reference:	Brunstrom, B., et al. 1990. Embryotoxicity of polycyclic aromatic hydrocarbons (PAHs) in three domestic avian species, and of PAHs and coplanar polychlorinated biphenyls (PCBs) in the common eider. Environmental Pollution 67:133–143.
Test Species:	Chick embryos Body weight: 0.058 kg (Brunstrom et al. 1990) Food consumption: 0.008 kg/day (Brunstrom et al. 1990)
Study Duration:	18 days
Endpoint:	Mortality
Exposure Route:	Injection into egg
Dosage:	2.0 mg/kg/egg = NOAEL
Calculations:	2.0 mg/kg/egg = NOAEL x 0.0096 kg embryo wt. = 0.0192 mg/egg x 1 egg/day / 0.058 kg = 0.3310 mg/kg
Comments:	Assumptions: (1) concentration in adults is equivalent to concentration in eggs, (2) chemical does not accumulate in adults, (3) eggs laid - one/day, and (4) no activation of chemical.
Final NOAEL:	0.3310 mg/kg/day

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Compound: Cobalt
Form: Cobalt chloride
Reference: ATSDR. 1991. Toxicity Profile. TP-91/10.
Test Species: Rat
Body weight: 0.35
Food consumption: 0.028 kg/day (ORNL 1994)
Study Duration: Not specified
Endpoint: Reproductive effects
Exposure Route: Not specified
Dosage: NOAEL = 5 mg/kg/day
Calculations: None
Comments: None
Final NOAEL: 5 mg/kg/day

Compound: Cobalt
Form: Cobalt Chloride
Reference: Gilani, S.H., and Y. Alibha. 1990. Teratogenicity of metals to chick embryos. J. Tox. and Env. Health. 30:23–31.
Test Species: Chick embryos
Body weight: 0.058 kg
Food consumption: 0.11 kg/day
Study Duration: 12 days
Exposure Route: Injection into air sacs
Endpoint: Teratogenicity
Dosage: 0, 1, 4, 7, 10, 50, 100, ug/egg; NOAEL = 1 ug/egg
Calculations:

$$\frac{1\ \mu g\ Co}{egg}\ X\ \frac{58\ g\ (egg\ weight)}{day} = 0.0172\ \mu g / g = mg / kg$$

Comments: The study is considered chronic because of the critical life stage of exposure. The following assumptions were also made: (1) 100 % deposition of chemical into the egg from the adult, (2) the chemical does not accumulate in other tissues, and (3) one egg is laid each day.
Final NOAEL: 0.0172 mg/kg/day

Compound: Dibenzo(ah)anthracene
Form: Not applicable
Reference: Mackenzie, K.M., and D.M. Angevine. 1981. Infertility in mice exposed in utero to benzo[a]pyrene. Biol. Reprod. 24:183-191.
Test Species: Mouse
Body weight: 0.03 kg (EPA 1988)
Food consumption: 0.0055 (ORNL 1994)
Study Duration: Days 7–16 of gestation (during a critical life stage = chronic)
Endpoint: Reproduction
Exposure Route: Oral intubation
Dosage: Three dose levels: 10, 40, and 160 mg/kg/day;
LOAEL = 10 mg/kg/day
Calculations: TEF = 1
NOAEL = 10 mg/kg/day / 10
= 1.0 mg/kg/day / 1 = 1 mg/kg/day

Comments: The above information is for benzo[a]pyrene. TEF (toxic equivalence factor) (EPA 1993, Nisbet and LaGoy 1992) used to adjust benzo[a]pyrene NOAEL to benzo[a]anthracene NOAEL. See comments for benzo[a]pyrene in ORNL (1994).
Final NOAEL: 1 mg/kg/day

Compound: Dibenzo(ah)anthracene
Form: Not applicable
Reference: Brunstrom, B., et al. 1990. Embryotoxicity of polycyclic aromatic hydrocarbons (PAHs) in three domestic avian species, and of PAHs and coplanar polychlorinated biphenyls (PCBs) in the common eider. Environmental Pollution 67:133–143.
Test Species: Chick embryos
Body weight: 0.058 kg (Brunstrom et al. 1990)
Food consumption: 0.008 kg/day (Brunstrom et al. 1990)
Study Duration: 18 days
Endpoint: Mortality
Exposure Route: Injection into egg
Dosage: 2.0 mg/kg/day = NOAEL
Calculations: TEF = 1
2.0 mg/kg/egg x 0.0096 kg embryo wt. = 0.0192 mg/egg x 1 egg/day / 0.058 kg x 1= 0.3310 mg/kg/day
Comments: Assumptions: (1) concentration in adults is equivalent to concentration in eggs, (2) chemical does not accumulate in adults, (3) eggs laid - 1/day, and (4) no activation of chemical.
Final NOAEL: 0.3310 mg/kg/day

Compound: 1,1-Dichloroethane
Form: Not applicable
Reference: Hoffman, H.T., et al. 1971. On the inhalation toxicity of 1,1- and 1,2-dichloroethane. Arch. Toxikol. 27:248-265.
Test Species: Rat
Body weight: 0.35 kg (ORNL 1994)
Food consumption: 0.028 kg/day (ORNL 1994)
Study Duration: 13 weeks
Endpoint: No observed effects
Exposure Route: Intermittent inhalation
Dosage: NOEL = 115 mg/kg/day
Calculations: None
Comments: None
Final NOAEL: 115 mg/kg/day

Compound: Di-N-butyl phthalate
Form: Not applicable
Reference: Smith, C.C. 1953. Toxicity of butyl sterate, dibutyl sebacate, dibutyl phthalate and methoxyethyl oleate. Arch. Hyg. Occup. Med. 7:310–318.
Test Species: Male Sprague-Dawley rats
Body weight: 0.35 (ORNL 1994)
Food consumption: 0.028 kg/d (ORNL 1994)
Study Duration: One year

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Endpoint:	Increased mortality
Exposure Route:	Oral diet
Dosage:	0, 0.1, 0.05, 0.25, and 1.25 %; NOAEL = 125 mg/kg/day
Calculations:	None
Comments:	The rats receiving the highest dose had 50 percent mortality in the first week. The remaining animals survived the study with no apparent adverse effects.
Final NOAEL:	125 mg/kg/day

Compound:	Di-N-octyl phthalate
Form:	Di-2-ethylhexyl phthalate
Reference:	Peakall, D.B. 1975. Phthalate esters: occurrence and biological effects. In: Residue Reviews. Vol 54. F.A. Gunther and J.D. Gunther, eds. Springer Verlag, New York.
Test Species:	Rat Body weight: 0.35 kg (ORNL 1994) Food consumption: 0.028 kg/day (ORNL 1994)
Study Duration:	Unknown
Endpoint:	LD50 acute
Exposure Route:	Oral
Dosage:	30 g/kg
Calculations:	NOAELdi-n-octyl phthalate = (LD50)di-n-octyl phthalate *(NOAELdi-2-ethylhexyl phthalate / (LD50)di-2-ethylhexyl phthalate) = (30 g/kg) (400 mg/kg/day / 26.0 g/kg) = 461.54
Comments:	No chronic data for di-n-octyl phthalate could be found. Therefore, a 365-day NOAEL based on a daily concentration was used to approximate an NOAEL for di-n- octyl phthalate. Although the primary reference for di-n-octyl phthalate could not be obtained, the secondary reference is provided. The NOAEL and LD50 values for di-2-ethylhexyl phthalate were found in an EPA document called Ambient Water Quality of phthalate esters, 1980 EPA 440/5-80-067 (copy with butyl benzylphthalate information).
Final NOAEL:	461.54 mg/kg/day

Compound:	Di-N-octyl phthalate
Form:	Not applicable
Reference:	Bower, R.K., et al. 1970. Teratogenic effects in the chick embryo caused by esters of phthalic acid. J. Pharmacology and Experimental Theraputics. 171:314–324.
Test Species:	Chick embryo Egg weight: 0.058 kg (ORNL 1994) Food consumption: 0.008 kg/day (ORNL 1994)
Study Duration:	Injection at day 3 of incubation
Endpoint:	Mortality
Exposure Route:	Injection into egg
Dosage:	0.025 ml/egg (d14 = 0.980 g/ml (Source: Merck Index) (25% mortality)
Calculations:	0.025 ml/egg x 0.980 g/ml = 0.024 g/0.058 kg = 0.422 g/kg x 1000 mg/g = 422.4 422.4 x 0.01 = 42.24 (LOAEL to NOAEL)
Comments:	Considered chronic because of the critical life stage of the chicks.
Final NOAEL:	42.24 mg/kg/day

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Compound:	Endosulfan sulfate
Form:	Not applicable
Reference:	Gupta, P.K., et al. 1978. Teratogenic and embryotoxic effects of endosulfan in rats. Acta Pharmacology and Toxicology, 42:150.
Test Species:	Rat Body weight: 0.35 kg (ORNL 1994) Food consumption: 0.028 kg/day (ORNL 1994)
Study Duration:	7 days (<1 yr and during a critical lifestage=chronic)
Endpoint:	Fetal mortality, maternal toxicity
Exposure Route:	Oral
Dosage:	5.0 mg/kg/day LOAEL x 0.1 uncertainty factor = 0.5 mg/kg/day NOAEL for endosulfan
Calculations:	NOAELe.s. = LD50e.s. (NOAELs / (LD50)s) = (76 mg/kg) (0.5 mg/kg/day / 110 mg/kg) = 0.3455 mg/kg/day
Comments:	The NOAEL for endosulfan was considered chronic because exposure occurred during a critical life stage.
Final NOAEL:	0.3455 mg/kg/day

Compound:	Endrin ketone
Form:	Endrin
Reference:	Kavlock, R.J., et al. 1981. Perinatal toxicity of endrin in rodents. II. Fetotoxic effcts of prenatal exposure in rats and mice. Toxicology, 21:141–150.
Test Species:	Rat Body weight: 0.35 kg (ORNL 1994) Food consumption: 0.028 kg/day (ORNL 1994)
Study Duration:	14 days (<1 yr and during a critical lifestage=chronic)
Endpoint:	Maternal weights
Exposure Route:	Oral (intubation)
Dosage:	0.450, 0.300, 0.150, 0.075, and 0 mg/kg/day NOAEL = 0.150 mg/kg/day for endrin
Calculations:	NOAELketo-endrin = LD50 keto-endrin x (NOAELendrin / LD50endrin) =0.8 mg/kg (0.15 mg/kg/day / 5.3 mg/kg) = 0.023 mg/kg/day
Comments:	Endrin was used to extrapolate to endrin ketone. The NOAEL for endrin is considered chronic because the exposure occurred during a critical life stage.
Final NOAEL:	0.023 mg/kg/day

Compound:	Fluoranthene
Form:	Not applicable
Reference:	EPA. 1988. 13-week mouse oral subchronic study. Prepared by Toxicity Research Laboratories, Ltd., Muskegon, MI for the Office of Solid Waste, Washington, DC.
Test Species:	Mouse Body weight: 0.03 kg (ORNL 1994) Food consumption: 0.0055 kg/day (ORNL 1994)
Study Duration:	13 weeks
Endpoint:	Nephropathy, body weight, food consumption
Exposure Route:	Gavage

Dosage:	0, 125, 250, and 500 mg/kg/day
Calculations:	NOAEL = 125 mg/kg/day
Comments:	All treated mice exhibited dose dependent nephropathy and increased salivation and liver enzyme levels. These were either not significant, not dose-related, or not considered adverse.
Final NOAEL:	125 mg/kg/day

Compound:	Fluoranthene
Form:	Not applicable
Reference:	Brunstrom, B., et al. 1990. Embryotoxicity of polycyclic aromatic hydrocarbons (PAHs) in three domestic avian species, and of PAHs and coplanar polychlorinated biphenyls (PCBs) in the common eider. Environmental Pollution 67:133–143.
Test Species:	Chick embryos Body weight: 0.058 kg (Brunstrom et al. 1990) Food consumption: 0.008 kg/day (Brunstrom et al. 1990)
Study Duration:	18 days
Endpoint:	Mortality
Exposure Route:	Injection into egg
Dosage:	2.0 mg/kg/egg = NOAEL
Calculations:	2.0 mg/kg/egg = NOAEL x 0.0096 kg embryo wt. = 0.0192 mg/egg x 1 egg/day / 0.058 kg = 0.3310 mg/kg/day
Comments:	Assumptions: (1) concentration in adults is equivalent to concentration in eggs, (2) chemical does not accumulate in adults, (3) eggs laid - one/day, and (4) no activation of chemical.
Final NOAEL:	0.3310 mg/kg/day

Compound:	Fluorene
Form:	Not applicable
Reference:	EPA. 1989. Mouse oral subchronic study. Prepared by Toxicity Research Laboratories, Ltd., Muskegon, MI, for the Office of Solid Waste, Washington, DC.
Test Species:	Mice Body weight: 0.03 kg (ORNL 1994) Food consumption: 0.0055 kg/day (ORNL 1994)
Study Duration:	13 weeks
Endpoint:	Decreased RBC, packed cell volume and hemoglobin
Exposure Route:	Gavage in corn oil
Dosage:	0, 125, 250, and 500 mg/kg/day
Calculations:	None
Comments:	None
Final NOAEL:	125 mg/kg/day

Compound:	Fluorene
Form:	Not applicable
Reference:	Brunstrom, B., et al. 1990. Embryotoxicity of polycyclic aromatic hydrocarbons (PAHs) in three domestic avian species, and of PAHs and coplanar polychlorinated biphenyls (PCBs) in the common eider. Environmental Pollution 67:133–143.

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Test Species:	Chick embryos Body weight: 0.058 kg (Brunstrom et al. 1990) Food consumption: 0.008 kg/day (Brunstrom et al. 1990)
Study Duration:	18 days
Endpoint:	Mortality
Exposure Route:	Injection into egg
Dosage:	2.0 mg/kg/egg = NOAEL
Calculations:	2.0 mg/kg/egg = NOAEL x 0.0096 kg embryo wt. = 0.0192 mg/egg x 1 egg/day / 0.058 kg = 0.3310 mg/kg/day
Comments:	No effects at this dose (highest dose). Assumptions: (1) concentration in adults is equivalent to concentration in eggs, (2) chemical does not accumulate in adults, (3) eggs laid - one/day, and (4) no activation of chemical.
Final NOAEL:	0.33 mg/kg/day

Compound:	Heptachlor
Form:	Not applicable
Reference:	Hill, E.F., and M.B. Camardese. 1986. Lethal dietary toxicities of environmental contaminants and pesticides to coturnix. USDOI, Fish and Wildlife Technical Report 2, Washington, D.C.
Test Species:	Coturnix Body weight: 0.09 kg (Dunning 1993) Food consumption: 0.0094 kg/day (Hill and Camardese 1986)
Study Duration:	5 days (<1 yr and not during a critical lifestage=subchronic)
Endpoint:	Death, LOAEL = 71 ppm dietary
Exposure Route:	Dietary
Dosage:	5 conccentrations between 50 and 200 ppm, 15 birds/treatment and 45 control birds, 14 day old chicks
Calculations:	[(71mg/kg) (0.0094 kg/day) / 0.09 kg bw] x 0.01 UF = 0.074
Comments:	An uncertainty factor of 0.01 was used to calculate LOEL to NOEL and subchronic to chronic.
Final NOAEL:	0.074 mg/kg/day

Compound:	Heptachlor epoxide
Form:	Not applicable
Reference:	Dow Chemical Company. 1958. MRID No. 00061912. Available from EPA. Write to FOI, EPA, Washington, DC. 20460.
Test Species:	Dog Body weight: 12.7 kg
Study Duration:	60 weeks
Endpoint:	Increased liver-to-body weight ratio in males and females
Exposure Route:	Diet
Dosage:	0, 0.5, 2.5, 5, and 7.5 ppm
Calculations:	Not applicable
Comments:	None
Final NOAEL:	0.125 mg/kg/day

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Compound:	Heptachlor epoxide
Form:	Not applicable
Reference:	Velsicol Chemical. 1959. (from IRIS)
Test Species:	Rat Body weight: 0.35 kg
Study Duration:	Three generation
Endpoint:	Reproduction
Exposure Route:	Not specified
Dosage:	NOAEL = 0.25 mg/kg/day
Calculations:	Not applicable
Comments:	None
Final NOAEL:	0.25 mg/kg/day

Compound:	Heptachlor epoxide
Form:	Not applicable
Reference:	Stickel, W.H., et al. 1965. Effects of heptachlor-contaminated earthworms on woodcocks. Journal of Wildlife Management, 29:132–146.
Test Species:	Woodcocks Body weight: 0.160 kg (Stickel et al. 1965)
Study Duration:	60 days (<1 yr, not during a critical lifestage=subchronic)
Endpoint:	Death
Exposure Route:	Dietary
Dosage:	0, 0.069 (NOAEL), and 0.33 mg/kg/day
Calculations:	0.069 mg/kg/day NOAEL (subchronic) x 0.1 = 0.0069 mg/kg/day (chronic NOAEL)
Comments:	Only two concentrations were used in this study (0.65 and 2.86). Concentrations ingested per day (0.011 and 0.053 mg/day) were divided by the body weight of male woodcocks to obtain a mg/kg/day concentration. In addition, the study was only 60 days; therefore, it was considered subchronic.
Final NOAEL:	0.0069 mg/kg/day

Compound:	Indeno[1,2,3-cd]pyrene
Form:	not applicable
Reference:	Mackenzie, K.M., and D.M. Angevine. 1981. Infertility in mice exposed in utero to benzo[a]pyrene. Biol. Reprod. 24:183–191.
Test Species:	Mouse Body weight: 0.03 kg (EPA 1988) Food consumption: 0.0055 (ORNL 1994)
Study Duration:	Days 7–16 of gestation (during a critical life stage = chronic)
Endpoint:	Reproduction
Exposure Route:	Oral intubation
Dosage:	Three dose levels: 10, 40, and 160 mg/kg/day; LOAEL = 10 mg/kg/day
Calculations:	TEF = 0.1 NOAEL = 10 mg/kg/day / 10 = 1.0 mg/kg/day / 0.1 = 10 mg/kg/day
Comments:	The above information is for benzo[a]pyrene. TEF (toxic equivalence factor) (EPA 1993, Nisbet and LaGoy 1992) used to adjust benzo[a]pyrene NOAEL to indeno[1,2,3-c,d]pyrene NOAEL. See comments for benzo[a]pyrene in ORNL (1994).
Final NOAEL:	10 mg/kg/day

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Compound:	Indeno[1,2,3-cd]pyrene
Form:	Not applicable
Reference:	Brunstrom, B., et al. 1990. Embryotoxicity of polycyclic aromatic hydrocarbons (PAHs) in three domestic avian species, and of PAHs and coplanar polychlorinated biphenyls (PCBs) in the common eider. Environmental Pollution 67:133–143.
Test Species:	Chick embryos Body weight: 0.058 kg (Brunstrom et al., 1990) Food consumption: 0.008 kg/day (Brunstrom et al., 1990)
Study Duration:	18 days
Endpoint:	Mortality
Exposure Route:	Injection into egg
Dosage:	0, 0.5, 2.0 mg/kg/egg
Calculations:	NOAEL=0.5 mg/kg/egg x 0.0096 kg embryo wt. = 0.0048 mg/egg x 1 egg/day / 0.058 kg = 0.0828 mg/kg/day
Comments:	Assumptions: (1) concentration in adults is equivalent to concentration in eggs, (2) chemical does not accumulate in adults, (3) eggs laid - one/day, and (4) no activation of chemical.
Final NOAEL:	0.0828 mg/kg/day

Compound:	Isophorone
Form:	Not applicable
Reference:	Nor-Am Agricultural Products, Inc. 1972. MRID No. 00123976. Available from EPA. Write to FOI, EPA, Washington, DC 20460.
Test Species:	Beagle dogs Body weight: 12.7 kg (ORNL 1994) Food consumption: 0.301 kg/day (ORNL 1994)
Study Duration:	90 days
Endpoint:	No observed effects
Exposure Route:	Gelatin capsules
Dosage:	0, 35, 75, and 150 mg/kg/day, 150 mg/kg/day = NOAEL
Calculations:	None
Comments:	No effects were observed.
Final NOAEL:	150 mg/kg/day

Compound:	Manganese
Form:	Manganese sulfate
Reference:	Vohra, P. and F.H. Kratzer. 1968. Zinc, copper and manganese toxicities in turkey poults and their alleviation by EDTA. Poultry Science 47:699–704.
Test Species:	Turkey (domestic) poults Body weight: 0.416 kg (Marrett and Sunde, 1968. Poultry Science 47:511–519.) Water consumption: 0.033 L/day Food consumption: 0.033 kg/day (from controls in study)
Study Duration:	21 days
Exposure Route:	Dietary
Endpoint:	Growth
Dosage:	0, 510, 1020, 2040, 3000, 3620, 4080, 4800 ppm NOAEL = 4080 mg $MnSO_4$ /kg

Calculations: $$\frac{4080\ mg\ MnSO_4}{kg\ food} X \frac{0.0.033\ kg}{day} \ / \ 0.416 kg\ bw \ = \ 323.65\ mg/kg/day$$

Comments: Because the length of the exposure was only 21 days, an uncertainty factor of 0.10 was multiplied by the value calculated as 323.65 mg/kg/day.

Final NOAEL: 32.36 mg/kg/day

Compound: Methylene chloride
Form: Not applicable
Reference: Eivor, E., et al. 1979. Effects of methylene chloride, trichloroethane, trichloroethylene, tetrachloroethylene and toluene on the development of the chick embryo. Toxicology 12:111–119.
Test Species: Chicken
Egg weight: 0.058
Food consumption: 0.008
Study Duration: Single dose at either 6 days or 3 days incubation
Endpoint: Death and malformation
Exposure Route: Egg injection
Dosage: 100, 50, 25 and 5 µmoles/egg
Calculations: 5 µmoles/egg x 1 egg/0.058 kg x .085 mg/1 µmole
= 7.328 mg/kg/day x 0.1 UF = .7328
Comments: Assumptions for these calculations are as follows: (1) concentrations in adult are the same as in the egg, (2) chemical does not accumulate in the adult, and (3) eggs were laid 1/day. Values were extrapolated from single exposure.
Final NOAEL: 0.7328 mg/kg/day

Compound: 2-Methylnaphthalene
Form: Not applicable
Reference: Mackenzie, K.M., and D.M. Angevine. 1981. Infertility in mice exposed in utero to benzo[a]pyrene. Biol. Reprod. 24:183–191.
Test Species: Mouse
Body weight: 0.03 kg (EPA 1988)
Food consumption: 0.0055 (ORNL 1994)
Study Duration: Days 7–16 of gestation (during a critical life stage = chronic)
Endpoint: Reproduction
Exposure Route: Oral intubation
Dosage: Three dose levels: 10, 40, and 160 mg/kg/day;
LOAEL = 10 mg/kg/day
Calculations: TEF = 0.001
NOAEL = 10 mg/kg/day / 10
= 1.0 mg/kg/day / 0.001 = 10 mg/kg/day
Comments: The above information is for benzo[a]pyrene. TEF (toxic equivalence factor) (EPA 1993, Nisbet and LaGoy 1992) used to adjust benzo[a]pyrene NOAEL to 2-methylnaphthalene NOAEL. See comments for benzo[a]pyrene in ORNL (1994).
Final NOAEL: 1000 mg/kg/day

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Compound: 2-Methylnaphthalene
Form: Not applicable
Reference: Brunstrom, B., et al. 1990. Embryotoxicity of polycyclic aromatic hydrocarbons (PAHs) in three domestic avian species, and of PAHs and coplanar polychlorinated biphenyls (PCBs) in the common eider. Environmental Pollution 67:133–143.
Test Species: Chick embryo
Body weight: 0.058 kg (Brunstrom et al. 1990)
Food consumption: 0.008 kg/day (Brunstrom et al. 1990)
Study Duration: 18 days
Endpoint: Mortality
Exposure Route: Injection
Dosage: Not applicable
Calculations: TEF = 0.001
NOAEL = 0.03310 mg/kg/day / 0.001 = 33.10 mg/kg/day
Comments: TEF (toxic equivalence factor) (EPA 1993, Nisbet and LaGoy 1992) used to adjust benzo[a]pyrene NOAEL to 2-methylnaphthalene NOAEL.
Assumptions: (1) concentration in adults is equivalent to concentration in eggs, (2) chemical does not accumulate in adults, (3) eggs laid - one/day, and (4) no activation of chemical.
Final NOAEL: 33.10 mg/kg/day

Compound: Molybdenum
Form: Molybdate
Reference: Schroeder, H.A., and M. Mitchner. 1971. Toxic effects of trace elements on the reproduction of mice and rats. Arch. Environ. Health. 23:102–106.
Test Species: Mice
Body weight: 0.03 kg
Water consumption: 0.0075 L/day
Food consumption: 0.0055 kg/day
Study Duration: Three generations
Exposure Route: Dietary (drinking water)
Endpoint: Mortality of young
Dosage: 10mg/L; LOAEL = l0 mg/L
Calculations:

$$\frac{10\ mg\ Mo}{L}\ X\ \frac{0.0075\ L}{day}\ /\ 0.03kg\ bw\ =\ 2.5\ mg/kg/day$$

Comments: This study was considered chronic because it involved exposure during a critical life stage. Because the value reported is an LOAEL, a chronic NOAEL was calculated.
Final NOAEL: 0.25 mg/kg/day

Compound: Molybdenum
Form: NaMoO4
Reference: Nagy, J.G., W. Chappell, and G.M. Ward. 1975. Effects of high molybdenum uptake in mule deer. J. Animal Science. 41: 412.
Test Species: Mule Deer
Body weight: 70 kg (Tech Memo II, S.M. Stoller Corp.)
Food consumption: 1.54 kg/day
Water consumption: 3.08 L/day
Study Duration: 25 days

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Exposure Route: Dietary
Endpoint: Weight, food intake
Dosage: 0, 50, 200, 1000 mg/kg; NOAEL = 1000 mg/kg

Calculations:

$$\frac{1000\ mg\ Mo}{kg\ food} X \frac{1.54\ kg}{day} \ / \ 70kg\ bw \ = \ 22\ mg\ /\ kg\ /\ day$$

Comments: Because the length of the exposure was only 25 days, an uncertainty factor of 0.10 was multiplied by the value calculated as 22 mg/kg/day.
Final NOAEL: 2.2 mg/kg/day

Compound: Molybdenum
Form: Molybdenum
Reference: Kratzer, F.H. 1958. Effect of dietary molybdenum upon chicks and poults. Proc. Soc. Exp. Biol. Med. 80:483 - 486.
Test Species: Chick
Body weight: 0.134 kg (Elzubeir and Davis 1988)
Water consumption: 0.016 kg/day (allometric equation)
Food consumption: 0.015 L/day (allometric equation)
Study Duration: 4 weeks
Exposure Route: Dietary
Endpoint: Growth
Dosage: 0, 50, 100, 200, 300, 400 mg/kg
Authors calculated NOAEL as 200 mg/kg

Calculations:

$$\frac{200\ mg\ Mo}{kg} X \frac{0.016\ kg\ food}{day} \ / \ 0.134kg\ bw \ = \ 23.88\ mg\ /\ kg\ /\ day$$

Comments: Study considered a sub-chronic exposure and therefore calculated NOAEL of 23.88 was multiplied by 0.1 to obtain the final NOAEL of 2.38 mg/kg/day.
Final NOAEL: 2.38 mg/kg/day.

Compound: Naphthalene
Form: Not applicable
Reference: Mackenzie, K.M., and D.M. Angevine. 1981. Infertility in mice exposed in utero to benzo[a]pyrene. Biol. Reprod. 24:183–191.
Test Species: Mouse
Body weight: 0.03 kg (EPA 1988)
Food consumption: 0.0055 (ORNL 1994)
Study Duration: Days 7–16 of gestation (during a critical life stage = chronic)
Endpoint: Reproduction
Exposure Route: Oral intubation
Dosage: Three dose levels: 10, 40, and 160 mg/kg/day;
LOAEL = 10 mg/kg/day
Calculations: TEF = 0.001
NOAEL = 10 mg/kg/day / 10
= 1.0 mg/kg/day / 0.001 = 10 mg/kg/day

Comments:	The above information is for benzo[a]pyrene. TEF (toxic equivalence factor) (EPA 1993, Nisbet and LaGoy 1992) used to adjust benzo[a]pyrene NOAEL to benzo[a]anthracene NOAEL. See comments for benzo[a]pyrene in ORNL (1994).
Final NOAEL:	1000 mg/kg/day

Compound:	Naphthalene
Form:	Not applicable
Reference:	Brunstrom, B., et al. 1990. Embryotoxicity of polycyclic aromatic hydrocarbons (PAHs) in three domestic avian species, and of PAHs and coplanar polychlorinated biphenyls (PCBs) in the common eider. Environmental Pollution 67:133–143.
Test Species:	Chick embryo Body weight: 0.058 kg (Brunstrom et al. 1990) Food consumption: 0.008 kg/day (Brunstrom et al. 1990)
Study Duration:	18 days
Endpoint:	Mortality
Exposure Route:	Injection into egg
Dosage:	Not applicable
Calculations:	TEF = 0.001 NOAEL=0.03310 mg/kg/day / 0.001 = 33.10 mg/kg/day
Comments:	TEF (toxic equivalence factor) (EPA 1993, Nisbet and LaGoy 1992) used to adjust benzo[a]pyrene NOAEL to naphthalene NOAEL. Assumptions: (1) concentration in adults is equivalent to concentration in eggs, (2) chemical does not accumulate in adults, (3) eggs laid - one/day, and (4) no activation of chemical.
Final NOAEL:	33.10 mg/kg/day

Compound:	Nitrate/Nitrite
Form:	Nitrite
Reference:	Shuval, H.I., and N. Gruener. 1972. Epidemiological and toxicological aspects of nitrates and nitrites in the environment. AJPH. 62:1045–1052.
Test Species:	Rat Body weight: 0.35 kg (ORNL 1994) Water consumption: 0.046 L/day
Study Duration:	2 years
Endpoint:	Methemoglobin levels
Exposure Route:	Oral
Dosage:	1, 100, 1000, 2000, and 3000 mg/L, NOAEL = 100 mg/L
Calculations:	(100 mg/L) (0.046 l/day) /0.35 kg = 13.14 mg/kg/day
Comments:	None
Final NOAEL:	13.14 mg/kg/day

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Compound:	Nitrate/Nitrite
Form:	Nitrite
Reference:	Adams, A.W., et al. 1966. Effects of nitrate and nitrite in the drinking water on chicks. poults, and laying hens. Poultry Science. 45:1215–1222.
Test Species:	Chicks (4 weeks old) Body weight: 0.262 Water consumption: 0.04 L/day
Study Duration:	2 years
Endpoint:	Growth
Exposure Route:	Drinking water
Dosage:	0, 25, 50, 100, and 200 mg/L. NOAEL = 100 mg/L
Calculations:	(100 mg/L) (0.046 l/day) /0.262 kg = 15.27 mg/kg/day
Comments:	None
Final NOAEL:	15.27 mg/kg/day

Compound:	Pentachlorophenol
Form:	Not applicable
Reference:	Schwetz, B.A., et al. 1978. Results of 2-year toxicity and reproduction studies on pentachlorophenol in rats. In: Chemistry, Pharmacology, and Environmental Toxicology. K.R. Rao, ed. Plenum Press, NY. p. 301.
Test Species:	Rats Body weight: 0.35 kg (ORNL 1994) Food consumption: 0.028 kg/day (ORNL 1994)
Study Duration:	2 years
Endpoint:	Liver and kidney pathology
Exposure Route:	Diet
Dosage:	3, 10, 30 mg/kg/day, 3 mg/kg/day = NOAEL
Calculations:	None
Comments:	None
Final NOAEL:	3 mg/kg/day

Compound:	Pentachlorophenol
Form:	Not applicable
Reference:	Nebeker, A.V., et al. 1994. Toxicity and estimated water quality criteria values in mallard ducklings exposed to pentachlorophenol. Archives of Environmental Contamination and Toxicology. 26:33–36.
Test Species:	Mallard Body weight: 0.15 kg Food consumption: 0.06 kg/day
Study Duration:	11 days
Endpoint:	Growth
Exposure Route:	Dietary
Dosage:	25, 54.2, 105.0, 233.2, 423.2, and 961 ppm; NOAEL = 423.2 ppm
Calculations:	((423 mg pentachlorophenol/kg x 0.06 kg/day)/0.15 kg body weight) x 0.1 (subchronic to chronic) = 16.92mg/kg/day
Comments:	None
Final NOAEL:	16.92 mg/kg/day

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Compound:	Phenanthrene
Form:	Not applicable
Reference:	Mackenzie, K.M., and D.M. Angevine. 1981. Infertility in mice exposed in utero to benzo[a]pyrene. Biol. Reprod. 24:183–191.
Test Species:	Mouse Body weight: 0.03 kg (EPA 1988) Food consumption: 0.0055 (ORNL 1994)
Study Duration:	Days 7–16 of gestation (during a critical life stage = chronic)
Endpoint:	Reproduction
Exposure Route:	Oral intubation
Dosage:	Three dose levels: 10, 40, and 160 mg/kg/day; LOAEL = 10 mg/kg/day
Calculations:	TEF = 0.001 NOAEL = 10 mg/kg/day / 10 = 1.0 mg/kg/day / 0.001 = 10 mg/kg/day
Comments:	The above information is for benzo[a]pyrene. TEF (toxic equivalence factor) (EPA 1993, Nisbet and LaGoy 1992) used to adjust benzo[a]pyrene NOAEL to phenanthrene NOAEL. See comments for benzo[a]pyrene in ORNL (1994).
Final NOAEL:	1000 mg/kg/day

Compound:	Phenanthrene
Form:	Not applicable
Reference:	Brunstrom, B., et al. 1990. Embryotoxicity of polycyclic aromatic hydrocarbons (PAHs) in three domestic avian species, and of PAHs and coplanar polychlorinated biphenyls (PCBs) in the common eider. Environmental Pollution 67:133–143.
Test Species:	Chick embryo Body weight: 0.058 kg (Brunstrom et al. 1990) Food consumption: 0.008 kg/day (Brunstrom et al. 1990)
Study Duration:	18 days
Endpoint:	Mortality
Exposure Route:	Injection into egg
Dosage:	2.0 mg/kg/egg = NOAEL
Calculations:	NOAEL=2.0 mg/kg/egg x 0.0096 kg embryo = 0.0192 mg/egg x 1egg/day /0.058 kg = 0.033 mg/kg/day
Comments:	Assumptions: (1) concentration in adults is equivalent to concentration in eggs, (2) chemical does not accumulate in adults, (3) eggs laid - one/day, and (4) no activation of chemical.
Final NOAEL:	0.033 mg/kg/day

Compound:	Phenol
Form:	Not applicable
Reference:	NTP (National Toxicology Program). 1983. Teratologic evaluation of phenol in CD rats and mice. Report prepared by Research Triangle Institute, Research Triangle Park, NC. NTIS PB83-247726. Gov. Rep. Announce. Index. 83(25):6247.
Test Species:	Rats Body weight: 0.35 kg (ORNL 1994) Food consumption: 0.028 kg/day (ORNL 1994)
Study Duration:	2 years

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Endpoint:	Reduced fetal body weight
Exposure Route:	Gavage
Dosage:	0, 30, 60, and 120 mg/kg/day, 60 mg/kg/day = NOAEL
Calculations:	None
Comments:	None
Final NOAEL:	60 mg/kg/day

Compound:	Phenol
Form:	Pentachlorophenol
Reference:	Schafer, E.W., et al. 1983. The acute oral toxicity, repellency, and hazard potential of 998 chemicals to one or more species of wild and domestic birds. Arch. Environ. Contam. Toxicol. 12:355–382.
Test Species:	Agelaius phoeniceus Body weight: 0.065 kg (Schafer et al. 1994) Food consumption: 0.014 kg/day (Schafer et al. 1994)
Study Duration:	acute
Endpoint:	Death
Exposure Route:	Oral
Dosage:	Up to 113 ppm (range not given), LD50 > 113 ppm
Calculations:	(113 ppm)[(169.2 mg/kg/d NOEL pcp) / 380 ppm LD50 pcp] = 50.3 mg/kg/day = NOEL
Comments:	Pentachlorophenol was used to extrapolate to phenol. pcp = pentachlorophenol
Final NOAEL:	50.3 mg/kg/day

Compound:	Pyrene
Form:	Not applicable
Reference:	EPA. 1989. Mouse oral subchronic toxicity of pyrene. Study conducted by Toxicity Research Laboratories, Muskegon, MI, for the Office of Solid Waste, Washington, DC.
Test Species:	Mouse Body weight: 0.03 kg (ORNL 1994) Food consumption: 0.0055 kg/day (ORNL 1994)
Study Duration:	13 weeks
Endpoint:	Kidney effects (renal tubular pathology, decreased kidney weights)
Exposure Route:	Gavage
Dosage:	0, 75, 125, and 250 mg/kg/day
Calculations:	Not applicable
Comments:	None
Final NOAEL:	75 mg/kg/day

Compound:	Pyrene
Form:	Not applicable
Reference:	Brunstrom, B., et al. 1990. Embryotoxicity of polycyclic aromatic hydrocarbons (PAHs) in three domestic avian species, and of PAHs and coplanar polychlorinated biphenyls (PCBs) in the common eider. Environmental Pollution 67:133–143.
Test Species:	Chick embryo Body weight: 0.058 kg (Brunstrom et al. 1990) Food consumption: 0.008 kg/day (Brunstrom et al. 1990)

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Study Duration: 18 days
Endpoint: Mortality
Exposure Route: Injection into egg
Dosage: 2.0 mg/kg/egg = NOAEL
Calculations: NOAEL=2.0 mg/kg/egg x 0.0096 kg embryo
= 0.0192 mg/egg x 1egg/day / 0.058 kg = 0.3310 mg/kg/day
Comments: Assumptions: (1) concentration in adults is equivalent to concentration in eggs, (2) chemical does not accumulate in adults, (3) eggs laid - one/day, and (4) no activation of chemical.
Final NOAEL: 0.3310 mg/kg/day

Compound: Silver
Form: Silver
Reference: Toxicological Profile for Silver. 1990. TP-90-24. U.S. Dept. of Health and Human Services. ATSDR. pg. 17.
Test Species: Rat
Body weight: 0.35 kg (ORNL 1994)
Water consumption: 0.58 kg/day (allometric)
Food consumption: 2.03 L/day (allometric)
Study Duration: 35 weeks
Exposure Route: Dietary
Endpoint: Weight loss
Dosage: Stated LOAEL of 222.2 mg/kg/day
Calculations: Not aplicable
Comments: LOAEL of 222.2 mg/kg/day was multiplied by an uncertainty factor of 0.1 for a final NOAEL of 22.22 mg/kg/day.
Final NOAEL: 22.22 mg/kg/day.

Compound: Silver
Form: Silver Nitrate
Reference: Jensen, L.S., R.P. Peterson, and L. Falen. 1974. Inducement of enlarged hearts and muscular dystrophy in turkey poults with dietary silver. Poultry Science 53:57–64.
Test Species: Turkey
Body weight: 0.3152 kg
Food consumption: 0.174 kg/day (ORNL 1994)
Study Duration: 5 weeks
Exposure Route: Dietary
Endpoint: Growth, cardiac enlargement, decreased hemoglobin levels
Dosage: 3 dose levels: 100, 300, and 900 ppm. Authors calculated an LOEL of 900 ppm and a NOAEL of 300 ppm.

Calculations: $$\frac{300\ mg\ AgNi}{kg\ food} X \frac{0.174\ kg\ food}{day} \ / \ 0.3152 kg\ bw = 165.61\ mg / kg / day$$

Comments: No food consumption data was available in the paper for domestic turkeys, therefore food consumption for wild turkey was used based on ORNL (1994).
Final NOAEL: 165.61 mg/kg/day

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Compound: Strontium
Form: Strontium carbonate
Reference: Weber, C.W., A.R. Doberenz, R.W.G. Wyckoff, and B.L. Reid. 1968. Strontium metabolism in chicks. Poultry Science. 47:1318–1328.
Test Species: Chicks
Body weight: 0.58 kg (mean weight of control animals at 4 weeks)
Water consumption: 0.016 kg/day
Food consumption: 0.015 L/day
Study Duration: 4 weeks
Exposure Route: Dietary
Endpoint: Weight gain, plasma Na, K, and Ca concentrations
Dosage: 0, 3000, 6000, 12000 mg/kg; NOAEL = 3000 mg/kg

Calculations:

$$\frac{3000\ mg\ St}{kg\ food}\ X\ \frac{0.016kg}{day}\ /\ 0.580kg\ bw\ =\ 82.76\ mg/kg/day$$

Comments: Because the length of the exposure was only 4 weeks, an uncertainty factor of 0.10 was multiplied by the value calculated as 82.76 mg/kg/day.
Final NOAEL: 8.276 mg/kg/day

Compound: Tetrachloroethene
Form: Not applicable
Reference: Buben, J.A., and E.J. O'Flaherty. 1985. Delineation of the role of metabolism in the hepatotoxicity of trichloroethylene and perchloroethylene: a dose-effects study. Toxicol. Appl. Pharmacol. 78:105–122.
Test Species: Mouse
Body weight: 0.03 kg (ORNL 1994)
Food consumption: 0.0055 kg/day (ORNL 1994)
Study Duration: 6 weeks
Endpoint: Hepatotoxicity
Exposure Route: Gavage
Dosage: 0, 20, 100, 200, 500, 1500, and 2000 mg/kg 5 days/week; NOAEL = 14 mg/kg/day
Calculations: None
Comments: None
Final NOAEL: 14 mg/kg/day

Compound: Tetrachloroethene
Form: Not applicable
Reference: Elovaara, E., et al. 1979. Effects of methylene chloride, trichloroethane, trichloroethylene, tetrachloroethylene and toluene on the development of the chick embryos. Toxicology 12:111–119.
Test Species: Chicken
Egg weight: 0.058 kg
Food consumption: 0.008 kg/day
Study Duration: Single dose at either 2 or 6 days of incubation
Endpoint: Death or malformation
Exposure Route: Egg injection
Dosage: 5, 25, 50, or 100 µmol/egg; LOAEL = 5 µmol/egg

Calculations:	5 µmol/egg x 1 egg/0.058 kg x 0.1659 mg/µmol x 0.1 (LOAEL->NOAEL) = 1.43 mg/kg/day
Comments:	Assumptions for these calculations are as follows: (1) concentrations in eggs are the same as in the adult ,(2) chemical does not accumulate in the adult, and (3) eggs were laid 1/day. Values were extrapolated from single exposure.
Final NOAEL:	1.43 mg/kg/day

Compound:	Tin
Form:	Inorganic
Reference:	Eisler, R. 1989. Tin Hazards to Fish, Wildlife, and Invertebrates: A Synoptic Review. USFWS. Patuxent Wildlife Research Center. Laurel, MD. Biological Report 85(1.15). Contaminant Hazard Reviews Report No. 15.
Test Species:	Dog Body weight: 0.35 Food consumption: 0.028 kg/day (ORNL 1994)
Study Duration:	13 weeks
Endpoint:	No observed effect
Exposure Route:	Diet
Dosage:	NOAEL = 25 mg/kg/day
Calculations:	None
Comments:	None
Final NOAEL:	25 mg/kg/day

Compound:	Toluene
Form:	Not applicable
Reference:	Acetone
Reference:	Elovaara, E., et al. 1979. Effects of methylene chloride, trichloroethane, trichloroethylene, tetrachloroethylene and toluene on the development of the chick embryos. Toxicology 12:111–119.
Test Species:	Chicken embryo Egg weight: 0.058 kg Food consumption: 0.08 kg/day
Study Duration:	Single dose at day 2 or 6 of incubation
Endpoint:	Death or malformation
Exposure Route:	Egg injection
Dosage:	5, 25, 50, and100
Calculations:	(25 µmol/egg) (1 egg/.058 kg) (.092 mg/µmol) = 39.66 x 0.1 (LOAEL to NOAEL) = 3.966 mg/kg/day
Comments:	Assumptions for these calculations are as follows: (1) concentrations in eggs are the same as in the adult ,(2) chemical does not accumulate in the adult, and (3) eggs were laid 1/day. Values were extrapolated from single exposure.
Final NOAEL:	3.966 mg/kg/day

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Compound:	1,2,4-Trichlorobenzene
Form:	Not applicable
Reference:	Robinson, K.S., et al. 1981. Multi-generation study of 1,2,4-trichlorobenzene in rats. J. Toxicol. Environ. Health. 8:495–500.
Test Species:	Rat Body weight: 0.35 kg (ORNL 1994) Food consumption: 0.028 kg/d (ORNL 1994)
Study Duration:	3 generations
Endpoint:	Increased adrenal weights
Exposure Route:	Drinking water
Dosage:	0, 25, 100, and 400 ppm, NOAEL = 100 ppm = 14.8 mg/kg/d
Calculations:	None
Comments:	None
Final NOAEL:	14.8 mg/kg/day

Compound:	1,1,1-Trichloroethane
Form:	Not applicable
Reference:	Eivor, E., et al. 1979. Effects of methylene chloride, trichloroethane, trichloroethylene, tetrachloroethylene and toluene on the development of the chick embryo. Toxicology 12:111–119.
Test Species:	Chicken embryo Body weight: 0.058 kg egg
Study Duration:	Single dose at day 3 or 6 of incubation
Endpoint:	Death or malformation
Exposure Route:	Injection into egg
Dosage:	5, 25, 50, and 100 µmol/egg; LOAEL = 5 µmol/egg
Calculations:	(5 µmol/egg) (egg/0.58 kg) (.13342 mg/µmol) (0.1 UF) = = 1.150 mg/kg/day
Comments:	None
Final NOAEL:	1.150 mg/kg/day

Compound:	Trichloroethene
Form:	1,1,1-Trichloroethane
Reference:	Weissman, C.L., et al. 1976 Acute inhalation, oral and intraperitoneal toxicity of trichloroethylene in mice. Chapter 8 In: Methyl chloroform and trichloroethylene in the environment. D.M. Aviado et al., eds. CRC Press, Cleveland OH, 61–63.
Test Species:	Mice Body weight: 0.0225 Food consumption: 0.0055
Study Duration:	24 hours
Endpoint:	Death
Exposure Route:	Gavage
Dosage:	2, 3, 4, 5, and 6 g/kg; LD50 2.85 g/kg
Calculations:	NOAEL = LD50TCE x (NOAELTCA/LD50TCA) NOAEL = 2.85 g/kg x 500 mg/kg/day / 9.7 g/kg) =146.91mg/kg/day

Comments: Only acute lethality data was availabe, therefore a similar structural compound, 1,1,1-trichloroethane, was used to calculate the NOAEL for trichloroethene. 1,1,1-trichloroethane data came from: Torkelson, T.R. et al. 1958. Toxicity of 1,1,1-trichloroethane as determined on laboratory animals and human subjects. American Industrial Hygiene Journal, 19: 353–362.

Final NOAEL: 146.91 mg/kg/day

Compound: Trichloroethene

Form: Not applicable

Reference: Elovaara, E., et al. 1979. Effects of methylene chloride, trichloroethane, trichloroethylene, tetrachloroethylene and toluene on the development of the chick embryos. Toxicology 12:111–119.

Test Species: Chicken
Egg weight: 0.058 kg
Food consumption: 0.008 kg/day

Study Duration: Single dose at either 2 or 6 days of incubation

Endpoint: Death or malformation

Exposure Route: Egg injection

Dosage: 5, 25, 50, or 100 µmol/egg; LOAEL = 5 µmol/egg

Calculations: 5 µmol/egg x 1 egg/0.058 kg x 0.1314 mg/µmol
= 11.33 x 0.1 (LOAEL to NOAEL) = 1.133 mg/kg/day

Comments: Assumptions for these calculations are as follows:
1. Concentrations in egg are the same as in the adult
2. Chemical does not accumulate in the adult
3. Eggs were laid 1/day

Values were extrapolated from single exposure.

Final NOAEL: 1.133 mg/kg/day

Compound: Vanadium

Form: Vanadium pentoxide

Reference: Hill, E.F., and M.B. Camardese. 1986. Lethal Dietary Toxicitites of Environmental Contaminants and Pesticides to Coturnix. USFWS Technical Report #2. Washington, DC.

Test Species: Coturnix
Body weight: 0.09 kg (Dunning 1993)
Water consumption: 0.012 L/day
Food consumption: 0.12 kg/day (from controls in study)

Study Duration: 5 days

Exposure Route: Dietary

Endpoint: Death

Dosage: Five concentrations between 500 and 2000 ppm. 15 birds per treatment.
LOEL = 500 ppm dietary

Calculations:

$$\frac{500\ mg\ Va}{kg\ food} X \frac{0.012\ kg}{day} \ / \ 0.09 kg\ bw \ = \ 67\ mg / kg / day$$

Comments: Because the length of the exposure was only 5 days and the calculated effect level was an LOEL, an uncertainty factor of 0.010 was multiplied by the value calculated as 67 mg/kg/day.

Final NOAEL: 0.67 mg/kg/day

Attachment 2
Table 1
Descriptions of Studies Used to Calculate Mammalian and Avian Benchmarks

Compound:	Vinyl acetate
Form:	Not applicable
Reference:	Shaw, D.C. 1988. Vinyl acetate: 104 week oral (drinking water) combined chronic toxicity and carcinogenicicty study in the rat following in vitro exposure, Vol. 1. Hazleton Laboratories, UK. Report No. 5531-5/16. EPA Doc. No. 86-0000265. Fiche No. 0TS0514156.
Test Species:	Rat Body weight: 0.35 kg (ORNL 1994) Food consumption: 0.028 kg/day (ORNL 1994)
Study Duration:	2 years
Endpoint:	Altered kidney and whole body weights
Exposure Route:	Oral
Dosage:	NOAEL = 100 mg/kg/day
Calculations:	None
Comments	None
Final NOAEL:	100 mg/kg/day

Compound:	Xylene
Form:	Not applicable
Reference:	Hill, E.F., and M.B. Camardese. 1986. Lethal dietary toxicities of environmental contaminants and pesticides to Coturnix. US Fish and Wildlife Service technical report # 2. Washington, DC.
Test Species:	Coturnix Body weight: 0.09 kg Food consumption: 0.012 kg/day
Study Duration:	5 days
Endpoint:	Death
Exposure Route:	Diet
Dosage:	3 concentrations between 10,000 and 20,000 ppm
Calculations:	((20,000 mg/kg x 0.012 kg /day)/0.09) x 0.1 (subchronic to chronic) = 267 mg/kg/day
Comments:	No observed effects at high dose
Final NOAEL:	267 mg/kg/day

Additional Supporting References:

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Torkelson, T.R., et al. 1958. Toxicity of 1,1,1-trichloroethane as determined on laboratory animals and human subjects. Ind. Hyg. J. 19:353–362.

Attachment 2
Table 2
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Preble's Meadow Jumping Mouse

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
Metals						
Aluminum	Mouse	1.930	Ondreicka *et al.* 1966[1]	2.245	80.009	80.009
Antimony	Mouse	0.125	Schroeder *et al.* 1968[1]	0.145	0.346	0.346
Arsenic	Mouse	0.126	Schroeder and Mitchner 1971[1]	0.147	0.682	0.682
Barium	Rat	5.060	Perry *et al.* 1983[1]	14.217	11.894	14.217
Beryllium	Rat	0.660	Schroeder and Mitchner 1971[1]	1.727	0.035	1.727
Cadmium	Mouse	0.191	Schroeder and Mitchner 1971[1]	0.223	0.479	0.479
Chromium[3]	Rat	2,737.000	Ivankovic and Preussmann 1975[1]	7,161.754	0.407	7,161.754
Cobalt	Rat	5.000	ATSDR, TP-90/10	13.192	3.278	13.192
Copper	Mink	11.710	Aulerich *et al.* 1982[1]	43.327	6.361	43.327
Lead	Rat	8.000	Azar *et al.* 1973[1]	20.933	0.561	20.933
Lithium	Rat	9.390	Marathe and Thomas 1986[1]	24.571	0.638	24.571
Magnesium	—	—	—	NA	256.400	256.400
Manganese	Rat	88.000	Laskey *et al.* 1982[1]	230.264	16.422	230.264
Mercury	Rat	0.006	Knoflach *et al.* 1986[1]	0.017	0.014	0.017
Molybdenum	Mouse	0.250	Schroeder *et al.* 1971[2]	0.291	12.061	12.061
Nickel	Rat	40.000	Ambrose *et al.* 1976[1]	104.666	1.216	104.666
Selenium	Mouse	0.075	Schroeder and Mitchner 1971[1]	0.087	0.317	0.317
Silver	Rat	22.220	USDHHS, ATSDR 1990[2]	58.626	0.743	58.626
Strontium	Rat	263.000	Skoryna 1981[1]	688.177	9.869	688.177
Thallium	Rat	0.007	Formigli *et al.* 1986[1]	0.020	0.697	0.697
Tin	Rat	25.000	USFWS 1989	65.961	9.477	65.961
Vanadium	Rat	0.210	Domingo *et al.* 1986[1]	0.498	2.313	2.313
Zinc	Rat	160.000	Schlicker and Cox 1968[1]	418.663	12.079	418.663

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Preble's Meadow Jumping Mouse

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
Pesticides and PCBs						
4,4'-DDT	Rat	0.800	Fitzhugh 1948[1]	2.094	—	2.094
Aldrin	Rat	0.200	Treon and Cleveland 1955[1]	0.523	—	0.523
Aroclor-1248	Rhesus monkey	0.010	Linzey 1987[1]	0.064	—	0.064
Aroclor-1254	White-footed mouse	0.135	Linzey 1987[1]	0.142	—	0.142
Aroclor-1260[4]	Rat	6.900	Linzey 1987[1]	18.205	—	18.205
Dieldrin	Rat	0.020	Treon and Cleveland 1955[1]	0.053	—	0.053
Endosulfan sulfate	Rat	0.346	Gupta *et al.* 1978[1]	0.912	—	0.912
Endrin ketone	Rat	0.023	Kavlock *et al.* 1981[2]	0.061	—	0.061
Heptachlor	Rat	0.800	Eisler 1968[1]	2.094	—	2.094
Heptachlor epoxide	Rat	0.250	IRIS	0.660	—	0.660
Methoxychlor	Rat	4.000	Gray *et al.* 1988[1]	10.554	—	10.554
delta-BHC	Rat	1.600	Grant *et al.* 1977[1]	4.186	—	4.186
gamma-BHC (Lindane)	Rat	0.330	Palmer *et al.* 1978[1]	0.871	—	0.871
Semivolatile Organic Compounds						
1,2,4-Trichlorobenzene	Rat	14.800	IRIS 1994	39.049	—	39.049
1,4-Dichlorobenzene		0.000		659.614	—	659.614
2-Chlorophenol		0.000		13.192	—	13.192
2-Methylnaphthalene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	1,163.433	—	1,163.433
2-Methylphenol		0.000		131.923	—	131.923
4-Nitroaniline		0.000		111.771	—	111.771
Acenaphthene	Mouse	175.000	IRIS	1,163.433	—	1,163.433
Acenaphthylene[6]	—	—	—	NA	—	NA
Anthracene	Mouse	1,000.000	IRIS	1,164.277	—	1,164.277
Benzo(a)anthracene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	11.634	—	11.634
Benzo(a)pyrene	Mouse	1.000	Mckenzie and Angevine 1981[1]	1.163	—	1.163
Benzo(b)fluoranthene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	11.634	—	11.634

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NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Preble's Meadow Jumping Mouse

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
Benzo(ghi)perylene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	116.343	—	116.343
Benzo(k)fluoranthene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	11.634	—	11.634
Benzoic acid	—	—	—	NA	—	NA
Benzyl alcohol	Dog	3.130	IRIS	27.308	—	27.308
Bis(2-chloroisopropyl)ether	Mouse	35.800	HEAST	41.681	—	41.681
Bis(2-ethylhexyl)phthalate	Mouse	18.330	Lamb *et al.* 1987	21.321	—	21.321
Butyl benzyl phthalate	Rat	35.380	IARC Monographs	93.349	—	93.349
Chrysene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	116.343	—	116.343
Di-N-butyl phthalate	Mouse	550.000	IRIS	329.807	—	329.807
Di N-octyl phthalate	Rat	461.540	Peakell 1975[2]	1,217.647	—	1,217.647
Dibenzo(ah)anthracene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	1.163	—	1.163
Dibenzofuran	—	—	—	NA	—	NA
Fluoranthene	Mouse	125.000	IRIS	145.535	—	145.535
Fluorene	Mouse	125.000	IRIS	145.535	—	145.535
Hexachlorobutadiene		0.000		0.528	—	0.528
Hexachloroethane		0.000		2.638	—	2.638
Indeno(1,2,3-cd)pyrene	Mouse	1.000	Mckenzie and Angevine 1981[1]	11.634	—	11.634
Isophorone	Dog	150.000	IRIS	1,308.678	—	1,308.678
N-Nitrosodiphenylamine		0.000		211.076	—	211.076
Naphthalene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	1,163.433	—	1,163.433
Pentachlorophenol	Rat	3.000	IRIS	7.915	—	7.915
Phenanthrene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	1,163.433	—	1,163.433
Phenol	Rat	60.000	IRIS	158.307	—	158.307
Pyrene	Mouse	75.000	IRIS	87.321	—	87.321
Volatile Organic Compounds						
1,1,1-Trichloroethane	Mouse	1,000.000	Lane *et al.* 1982[1]	1,223.894	—	1,223.894
1,1,2,2-Tetrachloroethane		0.000		NA	—	NA

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Table 2
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Preble's Meadow Jumping Mouse

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
1,1-Dichloroethane	Rat	115.000	HEAST	303.422	—	303.422
1,1-Dichloroethene	Rat	30.000	Quast *et al.* 1983[1]	79.154	—	79.154
1,2-Dichloroethane	Mouse	50.000	Lane *et al.* 1982[1]	61.195	—	61.195
1,2-Dichloroethene	Mouse	45.200	Palmer *et al.* 1979[1]	52.630	—	52.630
1,3-Dichloropropene	Rat	3.000	IRIS	7.915	—	7.915
2-Butanone	Rat	1,771.000	IRIS	4,672.704	—	4,672.704
2-Chloroethyl Vinyl Ether	Rat	0.085	Handbook of Toxic and Hazardous	0.224	—	0.224
4-Methyl-2-pentanone	Rat	25.000	Microbial Associates 1986 [1]	65.416	—	65.416
Acetone	Rat	10.000	EPA 1986	26.167	—	26.167
Benzene	Mouse	26.360	Nawrot and Staples 1979[1]	30.662	—	30.662
Chloroform	Rat	15.000	Palmer *et al.* 1979[1]	39.250	—	39.250
Methylene chloride	Rat	5.850	NCA 1982[1]	15.307	—	15.307
Styrene	Dog	200.000	IRIS	1,744.905	—	1,744.905
Tetrachloroethene	Mouse	14.000	IRIS	16.300	—	16.300
Toluene	Rat	25.980	Nawrot and Staples 1979[1]	30.220	—	30.220
Total xylenes	Mouse	2.060	Marks *et al.* 1982[1]	2.396	—	2.396
Trichloroethene	Mouse	146.910	Weissman 1981[2]	171.044	—	171.044
Vinyl acetate	Rat	100.000	HEAST	263.846	—	263.846
Water Quality Parameters					—	
Nitrate/Nitrite[7]	Rat	13.140	Shuval *et al.* 1972[2]	34.669	0.132	34.669

[1]Based on values used in ORNL 1994
[2]Based on values researched by Clemson University
[3]NOAEL for chromium +3
[4]Same as for aroclor-1254
[5]Mixed isomers for delta-BHC
[6]Values are extrapolated from benzo(a)pyrene
[7]Values are for nitrite
[8]Sullivan (1995)

HEAST - Health Effects Assessment Summary Tables
IRIS - EPA's Integrated Risk Information System

Attachment 2
Table 3
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
American Kestrel

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
Metals						
Aluminum	Ringed dove	111.400	Carriere *et al.* 1986[1]	122.688	130.867	130.867
Antimony	—	—	—	NA	—	NA
Arsenic	Brown-headed cowbird	2.460	USFWS 1969[1]	1.846	0.053	1.846
Barium	Chicken	20.860	Johnson *et al.* 1960[1]	21.155	3.103	21.155
Beryllium	—	—	—	NA	0.015	0.015
Cadmium	Mallard	1.450	White and Finley 1978[1]	3.115	0.952	3.115
Chromium	Black duck	1.000	Haseltine *et al.*[1]	2.207	1.113	2.207
Cobalt	Chicken	0.017	Galani and Alibhai 1990[2]	0.040	0.076	0.076
Copper	Chicken	33.210	Mehring *et al.* 1960[1]	33.680	15.637	33.680
Lead	American kestrel	3.850	Pattee 1984[1]	3.850	1.223	3.850
Lithium	—	—	—	NA	0.099	0.100
Magnesium	—	—	—	NA	127.452	127.452
Manganese	Turkey poults	32.360	Vohra and Kratzer 1968[2]	21.089	6.067	21.089
Mercury	Mallard	0.006	Heinz 1979[1]	0.014	—	0.014
Molybdenum	Chicken	2.380	Kratzer 1958[2]	2.497	0.135	2.497
Nickel	Mallard duckling	77.400	Cain and Pafford 1981[1]	146.122	3.021	146.122
Selenium	Mallard	0.400	Heinz *et al.* 1987[1]	0.820	0.372	0.820
Silver	Turkey	165.610	Jensen, Peterson, Falen 1974[2]	2,304.896	—	2,304.896
Strontium	Chicken four weeks	8.280	Weber *et al.* 1968[2]	14.151	2.560	14.151
Thallium	—	—	—	NA	0.007	0.007
Tin	—	—	—	NA	11.455	11.455
Vanadium	Coturnix	0.670	Hill and Camardese 1986[2]	0.616	0.279	0.616
Zinc	Mallard	3.000	Gasaway and Buss 1972[1]	6.445	38.207	38.207

Attachment 2
Table 3
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
American Kestrel

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
Pesticides and PCBs						
4,4'-DDT	Brown pelican	0.000	Anderson *et al.* 1975[1]	0.001	—	0.001
Aldrin[3]	Barn owl	0.077	Mendenhall *et al.* 1983[1]	0.122	—	0.122
Aroclor-1248	Ring-necked pheasant	0.180	Dahlgren *et al.* 1972[1]	0.361	—	0.361
Aroclor-1254	Ring-necked pheasant	0.180	Dahlgren *et al.* 1972[1]	0.361	—	0.361
Aroclor-1260	Coturnix	2.000	Dahlgren *et al.* 1972[1]	1.838	—	1.838
Dieldrin	Barn-owl	0.077	Mendenhall *et al.* 1983[1]	0.122	—	0.122
Endosulfan sulfate	—	—	—	NA	—	NA
Endrin ketone	—	—	—	NA	—	NA
Heptachlor	Corturnix	0.074	Hill and Camardese 1986[2]	0.068	—	0.068
Heptachlor epoxide	Woodcock	0.007	No author listed	0.008	—	0.008
Methoxychlor	—	—	—	NA	—	NA
delta-BHC	Japanese quail	0.563	Chakravarty and Lahiri 1986[1]	0.603	—	0.603
gamma-BHC (Lindane)	Mallard	2.000	Chakravarty and Lahiri 1986[1]	4.011	—	4.011
Semivolatile Organic Compounds						
1,2,4-Trichlorobenzene	—	—	—	NA	—	NA
1,4-Dichlorobenzene	—	—	—	NA	—	NA
2,4-Dimethylphenol	—	—	—	NA	—	NA
2-Chlorophenol		0.000		41.477	—	41.477
2-Methylnaphthalene	Chicken	33.100	Brunstrom *et al.* 1990[2]	77.625	—	77.625
2-Methylphenol		0.000		NA	—	NA
4-Nitroaniline		0.000		NA	—	NA
Acenaphthene	Chicken	33.100	Brunstrom *et al.* 1990[2]	77.625	—	77.625
Acenaphthylene	—	—	—	NA	—	NA
Anthracene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.078	—	0.078
Benzo(a)anthracene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.776	—	0.776
Benzo(a)pyrene	Chicken	0.033	Brunstrom *et al.* 1990[2]	0.078	—	0.078
Benzo(b)fluoranthene	Chicken	0.330	Brunstrom *et al.* 1990[2]	0.774	—	0.774

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Table 3
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
American Kestrel

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
Benzo(ghi)perylene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.776	—	0.776
Benzo(k)fluoranthene	Chicken	0.033	Brunstrom *et al.* 1990[2]	0.077	—	0.077
Benzoic acid	—	—	—	NA	—	NA
Benzyl alcohol	—	—	—	NA	—	NA
Bis(2-chloroisopropyl)ether	—	—	—	NA	—	NA
Bis(2-ethylhexyl)phthalate	Ringed dove	1.110	Peakall 1974[1]	1.204	—	1.204
Butyl benzyl phthalate	Chicken embryo	96.550	Bower *et al.* 1970[2]	226.426	—	226.426
Chrysene	Chicken	0.331	Brunstrom et al. 1990[2]	0.776	—	0.776
Di-N-butyl phthalate	Ringed dove	0.111	Peakall 1974[1]	0.121	—	0.121
Di-N-octyl phthalate	Chicken	42.240	Bower *et al.* 1970[2]	99.060	—	99.060
Dibenzo(ah)anthracene[4]	Chicken	0.033	Brunstrom *et al.* 1990[2]	0.078	—	0.078
Dibenzofuran	—	—	—	NA	—	NA
Diethyl Phthalate	Chicken	53.100	Bower et al. 1970[2]	124.528	—	124.528
Fluoranthene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.776	—	0.776
Fluorene	Chicken	0.330	Brunstrom *et al.* 1990[2]	0.774	—	0.774
Hexachlorobutadiene		0.000	Brunstrom *et al.* 1990[2]	4.580	—	4.580
Hexachloroethane		0.000	Brunstrom *et al.* 1990[2]	NA	—	NA
Indeno(1,2,3-cd)pyrene	Chicken	0.828	Brunstrom *et al.* 1990[2]	0.194	—	0.194
Isophorone	—	—	—	NA	—	NA
N-Nitrosodiphenylamine		0.000		NA	—	NA
Naphthalene	Chicken	33.100	Brunstrom *et al.* 1990[2]	77.625	—	77.625
Pentachlorophenol	Mallard	16.920	Nebeker *et al.* 1994[2]	18.432	—	18.432
Phenanthrene	Chicken	0.033	Brunstrom *et al.* 1990[2]	0.077	—	0.077
Phenol	Agelaius phoeniceus	50.300	Schafer *et al.* 1983[2]	41.477	—	41.477
Pyrene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.776	—	0.776
Volatile Organic Compounds						
1,1,1-Trichloroethane	Chicken	1.150	Elovaara *et al.* 1979[2]	2.697	—	2.697
1,1,2,2-Tetrachloroethane		0.000		NA	—	NA

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Table 3
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
American Kestrel

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
1,1-Dichloroethane	—	—	—	NA	—	NA
1,1-Dichloroethene	—	—	—	NA	—	NA
1,2-Dichloroethane	Chicken	17.200	Alumot *et al.* 1976[1]	40.286	—	40.286
1,2-Dichloroethene	—	—	—	NA	—	NA
1,3-Dichloropropene	—	—	—	NA	—	NA
2-Butanone	—	—	—	NA	—	NA
2-Chloroethyl Vinyl Ether	—	—	—	NA	—	NA
2-Hexanone	—	—	—	NA	—	NA
4-Methyl-2-pentanone	—	—	—	NA	—	NA
Acetone	Chicken	78.000	McLaughlin *et al.* 1965[2]	182.923	—	182.923
Benzene	Chicken	7.586	McLaughlin *et al.* 1965[2]	17.790	—	17.790
Carbon Disulfide	—	—	—	NA	—	NA
Carbon Tetrachloride	—	—	—	95.403	—	95.403
Chlorobenzene	—	—	—	NA	—	NA
Chloroethane	—	—	—	NA	—	NA
Chloroform	—	—	—	NA	—	NA
Chloromethane	—	—	—	NA	—	NA
Ethylbenzene	—	—	—	NA	—	NA
Methylene chloride	Chicken	0.728	Elovaara *et al.* 1979[2]	1.718	—	1.718
Styrene	Chicken	8.970	Vaino et al. 1977[2]	21.036	—	21.036
Tetrachloroethene	Chicken	1.430	Elovaara *et al.* 1979[2]	3.354	—	3.354
Toluene	Chicken	3.966	Elovaara *et al.* 1979[2]	9.301	—	9.301
Total xylenes	Coturnix	267.000	Hill and Camardese 1986[2]	245.363	—	245.363
Trichloroethene	Chicken	1.133	Elovaara *et al.* 1979[2]	2.657	—	2.657
Vinyl acetate	—	—	—	NA	—	NA
Vinyl Chloride	—	—	—	NA	—	NA
Cis-1,3-Dichloropropene	—	—	—	NA	—	NA
Trans-1,2-Dichloroethene	—	—	—	NA	—	NA

Attachment 2
Table 3
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
American Kestrel

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
O-Xylene	—	—	—	NA	—	NA
Water Quality Parameters						
Nitrate/Nitrite[5]	Chicken	1.530	Adams *et al.* 1966[2]	2.007	0.025	2.007

[1]Based on values used in ORNL 1994
[2]Based on values researched by Clemson University
[3]Dieldrin values are used for aldrin
[4]Dibenzo(ah)anthracene values are extrapolated from benzo(a)pyrene
[5]Values are for nitrite
[6]Sullivan (1995)

Attachment 2
Table 4
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Great Blue Heron

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
Metals						
Aluminum	Ringed dove	111.400	Carriere *et al.* 1986[1]	45.851	32.721	45.851
Antimony	—	—	—	NA	0.134	0.134
Arsenic	Brown-headed cowbird	2.460	USFWS 1969[1]	0.690	0.034	0.690
Barium	Chicken	20.860	Johnson *et al.* 1960[1]	7.906	0.661	7.906
Beryllium	—	—	—	NA	0.018	0.018
Cadmium	Mallard	1.450	White and Finley 1978[1]	1.164	0.013	1.164
Chromium	Black duck	1.000	Haseltine *et al.* [1]	0.825	1.551	1.551
Cobalt	Chicken	0.017	Galani and Alibhai 1990[2]	0.015	0.112	0.112
Copper	Chicken	33.210	Mehring *et al.* 1960[1]	12.587	9.931	12.587
Lead	American kestrel	3.850	Pattee 1984[1]	1.439	1.082	1.439
Lithium	—	—	—	NA	0.213	0.213
Magnesium	—	—	—	NA	11.932	11.932
Manganese	Turkey poults	32.360	Vohra and Kratzer 1968[2]	23.173	1.113	23.173
Mercury	Mallard	0.006	Heinz 1979[1]	0.005	0.001	0.005
Molybdenum	Chicken	2.380	Kratzer 1958[2]	0.933	0.200	0.933
Nickel	Mallard duckling	77.400	Cain and Pafford 1981[1]	54.608	0.259	54.608
Selenium	Mallard	0.400	Heinz *et al.* 1987[1]	0.306	0.012	0.306
Silver	Turkey	165.610	Jensen, Peterson, Falen 1974[2]	861.381	0.028	861.381
Strontium	Chicken four weeks	8.280	Weber *et al.* 1968[2]	5.288	1.456	5.288
Thallium	—	—	—	NA	0.046	0.046
Tin	—	—	—	NA	15.433	15.433
Vanadium	Coturnix	0.670	Hill and Camardese 1986[2]	0.230	0.168	0.230
Zinc	Mallard	3.000	Gasaway and Buss 1972[1]	2.409	138.711	138.711

Attachment 2
Table 4
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Great Blue Heron

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
Pesticides/PCBs						
4,4'-DDT	Brown pelican	0.000	Anderson *et al.* 1975[1]	0.000	—	0.000
Aldrin[3]	Barn owl	0.077	Mendenhall *et al.* 1983[1]	0.046	—	0.046
Aroclor-1248	Ring-necked pheasant	0.180	Dahlgren *et al.* 1972[1]	0.135	—	0.135
Aroclor-1254	Ring-necked pheasant	0.180	Dahlgren *et al.* 1972[1]	0.135	—	0.135
Aroclor-1260	Coturnix	2.000	Dahlgren *et al.* 1972[1]	0.690	—	0.687
Dieldrin	Barn owl	0.077	Mendenhall *et al.* 1983[1]	0.046	—	0.046
Endosulfan sulfate	—	—	—	NA	—	NA
Endrin ketone	—	—	—	NA	—	NA
Heptachlor	Coturnix	0.074	Hill and Camardese 1986[2]	0.025	—	0.025
Heptachlor epoxide	Woodcock	0.007	No author listed	0.003	—	0.003
Methoxychlor	—	—	—	NA	—	NA
delta-BHC	Japanese quail	0.563	Vos *et al.* 1971[1]	0.226	—	0.226
gamma-BHC (Lindane)	Mallard	2.000	Chakravarty and Lahiri 1986[1]	1.500	—	1.500
Semivolatile Organic Compounds						
1,2,4-Trichlorobenzene	—	—	—	NA	—	NA
1,4-Dichlorobenzene				NA	—	NA
2-Chlorophenol		0.000		15.501	—	15.501
2-Methylnaphthalene	Chicken	33.100	Brunstrom *et al.* 1990[2]	29.010	—	29.010
2-Methylphenol		0.000		NA	—	NA
4-Nitroaniline		0.000		NA	—	NA
Acenaphthene	Chicken	33.100	Brunstrom *et al.* 1990[2]	29.010	—	29.010
Acenaphthylene	—	—	—	NA	—	NA
Anthracene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.023	—	0.023
Benzo(a)anthracene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.290	—	0.290
Benzo(a)pyrene	Chicken	0.033	Brunstrom *et al.* 1990[2]	0.029	—	0.029
Benzo(b)fluoranthene	Chicken	0.330	Brunstrom *et al.* 1990[2]	0.289	—	0.289
Benzo(ghi)perylene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.290	—	0.290

Attachment 2
Table 4
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Great Blue Heron

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
Benzo(k)fluoranthene	Chicken	0.033	Brunstrom *et al.* 1990[2]	0.029	—	0.029
Benzoic acid	—	—	—	NA	—	NA
Benzyl alcohol	—	—	—	NA	—	NA
Bis(2-chloroisopropyl)ether	—	—	—	NA	—	NA
Bis(2-ethylhexyl)phthalate	Ringed dove	1.110	Peakall 1974[1]	0.450	—	0.450
Butyl benzyl phthalate	Chicken embryo	96.550	Bower *et al.* 1970[2]	84.619	—	84.619
Chrysene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.290	—	0.290
Di-N-butyl phthalate	Ringed dove	0.111	Peakall 1974[1]	0.045	—	0.045
Di-N-octyl phthalate	Chicken	42.240	Bower *et al.* 1970[2]	37.020	—	37.020
Dibenzo(ah)anthracene[4]	Chicken	0.033	Brunstrom *et al.* 1990[2]	0.029	—	0.029
Dibenzofuran	—	—	—	NA	—	NA
Fluoranthene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.290	—	0.290
Fluorene	Chicken	0.330	Brunstrom *et al.* 1990[2]	0.289	—	0.289
Hexachlorobutadiene		0.000	Brunstrom *et al.* 1990[2]	1.712	—	1.712
Hexachloroethane		0.000	Brunstrom *et al.* 1990[2]	NA	—	NA
Indeno(1,2,3-cd)pyrene	Chicken	0.828	Brunstrom *et al.* 1990[2]	0.073	—	0.073
Isophorone	—	—	—	NA	—	NA
N-Nitrosodiphenylamine		0.000		NA	—	NA
Naphthalene	Chicken	33.100	Brunstrom *et al.* 1990[2]	29.010	—	29.010
Pentachlorophenol	Mallard	16.920	Nebeker *et al.* 1994[2]	6.888	—	6.888
Phenanthrene	Chicken	0.033	Brunstrom *et al.* 1990[2]	0.029	—	0.029
Phenol	Agelaius phoeniceus	50.300	Schafer *et al.* 1983[2]	15.501	—	15.501
Pyrene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.290	—	0.290
Volatile Organic Compounds						
1,1,1-Trichloroethane	Chicken	1.150	Elovaara *et al.* 1979[2]	1.008	—	1.008
1,1,2,2-Tetrachloroethane		0.000		NA	—	NA
1,1-Dichloroethane	—	—	—	NA	—	NA
1,1-Dichloroethene	—	—	—	NA	—	NA

Attachment 2
Table 4
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Great Blue Heron

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
1,2-Dichloroethane	Chicken	17.200	Alumot *et al.* 1976[1]	15.067	—	15.067
1,2-Dichloroethene	—	—	—	NA	—	NA
1,3-Dichloropropene	—	—	—	NA	—	NA
2-Butanone	—	—	—	NA	—	NA
2-Chloroethyl Vinyl Ether	—	—	—	NA	—	NA
4-Methyl-2-pentanone	—	—	—	NA	—	NA
Acetone	Chicken	78.000	McLaughlin *et al.* 1965[2]	68.362	—	68.362
Benzene	Chicken	7.586	McLaughlin *et al.* 1965[2]	6.650	—	6.649
Chloroform	—	—	—	NA	—	NA
Methylene chloride	Chicken	0.733	Elovaara *et al.* 1979[2]	0.642	—	0.642
Styrene	Chicken	8.970	Vaino et al. 1977[2]	7.862	—	7.862
Tetrachloroethene	Chicken	1.430	Elovaara *et al.* 1979[2]	1.253	—	1.253
Toluene	Chicken	3.966	Elovaara *et al.* 1979[2]	3.476	—	3.476
Total xylenes	Coturnix	267.000	Hill and Camardese 1986[2]	91.697	—	91.697
Trichloroethene	Chicken	1.133	Elovaara *et al.* 1979[2]	0.993	—	0.993
Vinyl acetate	—	—	—	NA	—	NA
Water Quality Parameters						
Nitrate/Nitrite[5]	Chicken	1.530	Adams *et al.* 1966[2]	0.750	0.943	0.750

[1]Based on values used in ORNL 1994
[2]Based on values researched by Clemson University
[3]Dieldrin values are used for aldrin
[4]Dibenzo(ah)anthracene values are extrapolated from benzo(a)pyrene
[5]Values are for nitrite
[6]Sullivan (1995)

Attachment 2
Table 5
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Mallard

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
Metals						
Aluminum	Ringed dove	111.400	Carriere *et al.* 1986[1]	57.422	26.770	57.422
Antimony	—	—	—	NA	0.132	0.132
Arsenic	Mallard	5.135	USFWS 1969[1]	5.128	0.099	5.128
Barium	Chicken	20.860	Johnson *et al.* 1960[1]	9.901	1.816	9.901
Beryllium	—	—	—	NA	0.015	0.015
Cadmium	Mallard	1.450	White and Finley 1978[1]	1.458	0.970	1.458
Chromium	Black duck	1.000	Haseltine *et al.* [1]	1.033	0.080	1.033
Cobalt	Chicken	0.017	Galani and Alibhai 1990[2]	0.019	0.445	0.445
Copper	Chicken	33.210	Mehring *et al.* 1960[1]	15.763	0.365	15.763
Lead	American kestrel	3.850	Pattee 1984[1]	1.802	0.103	1.802
Lithium	—	—	—	NA	0.243	0.243
Magnesium	—	—	—	NA	36.287	36.287
Manganese	Turkey poults	32.360	Vohra and Kratzer 1968[2]	49.511	2.491	49.511
Mercury	Mallard	0.006	Heinz 1979[1]	0.006	0.024	0.024
Molybdenum	Chicken	2.380	Kratzer 1958[2]	1.169	1.478	1.478
Nickel	Mallard duckling	77.400	Cain and Pafford 1981[1]	68.390	0.243	68.390
Selenium	Mallard	0.400	Heinz *et al.* 1987[1]	0.384	0.079	0.384
Silver	Turkey	165.610	Jensen, Peterson, Falen 1974[2]	1,078.772	0.128	1,078.772
Strontium	Chicken four weeks	8.280	Weber *et al.* 1968[2]	6.623	3.147	6.623
Thallium	—	—	—	NA	0.105	0.105
Tin	—	—	—	NA	4.519	4.519
Vanadium	Mallard	11.380	Hill and Camardese 1986[2]	11.500	0.369	11.499
Zinc	Mallard	3.000	Gasaway and Buss 1972[1]	3.017	1.210	3.017

Attachment 2
Table 5
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Mallard

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
Pesticides and PCBs						
4,4'-DDT	Brown pelican	0.000	Anderson *et al.* 1975[1]	0.000	—	0.000
Aldrin[3]	Barn owl	0.077	Mendenhall *et al.* 1983[1]	0.057	—	0.057
Aroclor-1248	Ring-necked pheasant	0.180	Dahlgren *et al.* 1972[1]	0.172	—	0.172
Aroclor-1254	Ring-necked pheasant	0.150	Dahlgren *et al.* 1972[1]	0.172	—	0.172
Aroclor-1260	Coturnix	2.000	Dahlgren *et al.* 1972[1]	0.860	—	0.860
Dieldrin	Barn-owl	0.077	Mendenhall *et al.* 1983[1]	0.057	—	0.057
Endosulfan sulfate	—	—	—	NA	—	NA
Endrin ketone	—	—	—	NA	—	NA
Heptachlor	Coturnix	0.074	Hill and Camardese 1986[2]	0.032	—	0.032
Heptachlor epoxide	Woodcock	0.007	No author listed	0.004	—	0.004
Methoxychlor	—	—	—	NA	—	NA
delta-BHC	Japanese quail	0.563	Vos *et al.* 1971[1]	0.287	—	0.287
gamma-BHC (Lindane)	Mallard	2.000	Chakravarty and Lahiri 1986[1]	2.000	—	2.000
Semivolatile Organic Compounds						
1,2,4-Trichlorobenzene	—	—	—	NA	—	NA
1,4-Dichlorobenzene	—	—	—	NA	—	NA
2-Chlorophenol		0.000		19.413	—	19.413
2-Methylnaphthalene	Chicken	33.100	Brunstrom *et al.* 1990[2]	36.331	—	36.331
2-Methylphenol		0.000		NA	—	NA
4-Nitroaniline		0.000		NA	—	NA
Acenaphthene	Chicken	33.100	Brunstrom *et al.* 1990[2]	36.331	—	36.331
Acenaphthylene	—	—	—	NA	—	NA
Anthracene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.029	—	0.029
Benzo(a)anthracene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.363	—	0.363
Benzo(b)pyrene	Chicken	0.033	Brunstrom *et al.* 1990[2]	0.036	—	0.036
Benzo(b)fluoranthene	Chicken	0.330	Brunstrom *et al.* 1990[2]	0.362	—	0.362
Benzo(ghi)perylene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.363	—	0.363

Attachment 2
Table 5
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Mallard

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
Benzo(k)fluoranthene	Chicken	0.033	Brunstrom *et al.* 1990[2]	0.036	—	0.036
Benzoic acid	—	—	—	NA	—	NA
Benzyl alcohol	—	—	—	NA	—	NA
Bis(2-chloroisopropyl)ether	—	—	—	NA	—	NA
Bis(2-ethylhexyl)phthalate	Ringed dove	1.110	Peakall 1974[1]	0.573	—	0.573
Butyl benzyl phthalate	Chicken embryo	96.550	Bower *et al.* 1970[2]	105.980	—	105.975
Chrysene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.363	—	0.363
Di-N-butyl phthalate	Ringed dove	0.111	Peakall 1974[1]	0.057	—	0.057
Di-N-octyl phthalate	Chicken	42.240	Bower *et al.* 1970[2]	46.363	—	46.363
Dibenzo(ah)anthracene[4]	Chicken	0.033	Brunstrom *et al.* 1990[2]	0.036	—	0.036
Dibenzofuran	—	—	—	NA	—	NA
Diethyl Phthalate	Chicken	53.100	Bower et al. 1970[2]	58.284	—	58.284
Fluoranthene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.363	—	0.363
Fluorene	Chicken	0.330	Brunstrom *et al.* 1990[2]	0.362	—	0.362
Hexachlorobutadiene		0.000	Brunstrom *et al.* 1990[2]	2.143	—	2.143
Hexachloroethane		0.000	Brunstrom *et al.* 1990[2]	NA	—	NA
Indeno(1,2,3-cd)pyrene	Chicken	0.828	Brunstrom *et al.* 1990[2]	0.091	—	0.091
Isophorone	—	—	—	NA	—	NA
N-Nitrosodiphenylamine		0.000		NA	—	NA
Naphthalene	Chicken	33.100	Brunstrom *et al.* 1990[2]	36.331	—	36.331
Pentachlorophenol	Mallard	16.920	Nebeker *et al.* 1994[2]	16.920	—	16.920
Phenanthrene	Chicken	0.033	Brunstrom *et al.* 1990[2]	0.036	—	0.036
Phenol	Agelaius phoeniceus	50.300	Schafer *et al.* 1983[2]	19.413	—	19.413
Pyrene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.363	—	0.363
Volatile Organic Compounds						
1,1,1-Trichloroethane	Chicken	1.150	Elovaara *et al.* 1979[2]	1.262	—	1.262
1,1,2,2-Tetrachloroethane		0.000		NA	—	NA
1,1-Dichloroethane	—	—	—	NA	—	NA

Attachment 2
Table 5
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Mallard

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
1,1-Dichloroethene	—	—	—	NA	—	NA
1,2-Dichloroethane	Chicken	17.200	Alumot *et al.* 1976b[1]	19.169	—	19.169
1,2-Dichloroethene	—	—	—	NA	—	NA
1,3-Dichloropropene	—	—	—	NA	—	NA
2-Butanone	—	—	—	NA	—	NA
2-Chloroethyl vinyl ether	—	—	—	NA	—	NA
2-Hexanone	—	—	—	NA	—	NA
4-Methyl-2-pentanone	—	—	—	NA	—	NA
Acetone	Chicken	78.000	McLaughlin *et al.* 1965[2]	85.614	—	85.614
Benzene	Chicken	7.586	McLaughlin *et al.* 1965[2]	8.327	—	8.327
Carbon disulfide	—	—	—	NA	—	NA
Carbon tetrachloride	—	—	—	44.652	—	44.652
Chlorobenzene	—	—	—	NA	—	NA
Chloroethane	—	—	—	NA	—	NA
Chloroform	—	—	—	NA	—	NA
Chloromethane	—	—	—	NA	—	NA
Ethylbenzene	—	—	—	NA	—	NA
Methylene chloride	Chicken	0.733	Elovaara *et al.* 1979[2]	0.804	—	0.804
Styrene	Chicken	8.970	Elovaara *et al.* 1979[2]	9.846	—	9.846
Tetrachloroethene	Chicken	1.430	Elovaara *et al.* 1979[2]	1.570	—	1.570
Toluene	Chicken	3.966	Elovaara *et al.* 1979[2]	4.353	—	4.353
Total xylenes	Coturnix	267.000	Hill and Camardese 1986[2]	114.839	—	114.839
Trichloroethene	Chicken	1.133	Elovaara *et al.* 1979[2]	1.244	—	1.244
Vinyl acetate	—	—	—	NA	—	NA
Vinyl chloride	—	—	—	NA	—	NA
cis-1,3-dichloropropene	—	—	—	NA	—	NA
trans-1,2-dichloroethene	—	—	—	NA	—	NA
O-Xylene	—	—	—	NA	—	NA

Attachment 2
Table 5
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Mallard

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
Water Quality Parameters						
Nitrite	Chicken	1.530	Adams et al. 1966[2]	0.939	—	0.939
Nitrate/Nitrite[5]	Chicken	1.530	Adams *et al.* 1966[2]	0.939	0.054	0.939

[1]Based on values used in ORNL 1994
[2]Based on values researched by Clemson University
[3]Dieldrin values are used for aldrin
[4]Dibenzo(ah)anthracene values are extrapolated from benzo(a)pyrene
[5]Values are for nitrite
[6]Sullivan (1995)

Attachment 2
Table 6
NOAELS and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Coyote

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[8] (mg/kg)	TRV (mg/kg)
Metals						
Aluminum	Mouse	1.930	Ondreicka *et al.* 1966[1]	0.261	20.639	20.639
Antimony	Mouse	0.125	Schroeder *et al.* 1968[1]	0.017	0.170	0.170
Arsenic	Mouse	0.126	Schroeder and Mitchner 1971[1]	0.017	0.063	0.063
Barium	Rat	5.060	Perry *et al.* 1983[1]	1.654	1.548	1.654
Beryllium	Rat	0.660	Schroeder and Mitchner 1971[1]	0.201	0.017	0.201
Cadmium	Mouse	0.191	Schroeder and Mitchner 1971[1]	0.026	1.352	0.135
Chromium[3]	Rat	2,737.000	Ivankovic and Preussmann 1975[1]	832.996	0.352	832.996
Cobalt	Rat	5.000	ATSDR, TP-90/10	1.510	0.278	1.510
Copper	Mink	11.710	Aulerich *et al.* 1982[1]	5.041	1.089	5.041
Lead	Rat	8.000	Azar *et al.* 1973[1]	2.435	0.148	2.435
Lithium	Rat	9.390	Marathe and Thomas 1986[1]	2.856	0.318	2.856
Magnesium	—	—	—	NA	51.154	51.154
Manganese	Rat	88.000	Laskey *et al.* 1982[1]	26.783	1.617	26.783
Mercury	Rat	0.006	Knoflach *et al.* 1986[1]	0.002	0.001	0.002
Molybdenum	Mouse	0.250	Schroeder *et al.* 1971[2]	0.033	0.768	0.768
Nickel	Rat	40.000	Ambrose *et al.* 1976[1]	12.174	1.038	12.174
Selenium	Mouse	0.075	Schroeder and Mitchner 1971[1]	0.010	0.137	0.137
Silver	Rat	22.220	USDHHS, ATSDR 1990[2]	6.711	0.058	6.711
Strontium	Rat	263.000	Skoryna 1981[1]	80.043	2.680	80.043
Thallium	Rat	0.007	Formigli *et al.* 1986[1]	0.002	0.074	0.074
Tin	Rat	25.000	USFWS 1989	7.551	4.035	7.551
Vanadium	Rat	0.210	Domingo *et al.* 1986[1]	0.058	0.255	0.255
Zinc	Rat	160.000	Schlicker and Cox 1968[1]	48.696	4.836	48.696

Attachment 2
Table 6
NOAELS and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Coyote

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[8] (mg/kg)	TRV (mg/kg)
Pesticides and PCBs						
4,4'-DDT	Rat	0.800	Fitzhugh 1948[1]	0.243	—	0.243
Aldrin	Rat	0.200	Treon and Cleveland 1955[1]	0.061	—	0.061
Aroclor-1248[4]	Rhesus monkey	0.010	Linzey 1987[1]	0.007	—	0.007
Aroclor-1254	White-footed mouse	0.135	Linzey 1987[1]	0.059	—	0.059
Aroclor-1260[4]	Rat	6.900	Linzey 1987[1]	2.084	—	2.084
Dieldrin	Rat	0.020	Treon and Cleveland 1955[1]	0.006	—	0.006
Endosulfan sulfate	Rat	0.346	Gupta *et al.* 1978[1]	0.104	—	0.104
Endrin ketone	Rat	0.023	Kavlock *et al.* 1981[2]	0.007	—	0.007
Heptachlor	Rat	0.800	Eisler 1968[1]	0.243	—	0.243
Heptachlor epoxide	Dog	0.125	IRIS	0.125	—	0.125
Methoxychlor	Rat	4.000	Gray *et al.* 1988[1]	1.208	—	1.208
delta-BHC[5]	Rat	1.600	Grant *et al.* 1977[1]	0.006	—	0.006
gamma-BHC (Lindane)	Rat	8.000	Palmer *et al.* 1978[1]	2.435	—	2.435
Semivolatile Organic Compounds						
1,2,4-Trichlorobenzene	Rat	14.800	IRIS 1994	4.470	—	4.470
1,4-Dichlorobenzene		0.000		75.506	—	75.506
2-Chlorophenol		0.000		1.510	—	1.510
2-Methylnaphthalene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	135.026	—	135.026
2-Methylphenol		0.000		15.101	—	15.101
4-Nitroaniline		0.000		12.794	—	12.794
Acenaphthene	Mouse	175.000	IRIS	23.323	—	135.026
Acenaphthylene	—	—	—	NA	—	NA
Anthracene	Mouse	1,000.000	IRIS	133.274	—	133.274
Benzo(a)anthracene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	1.350	—	1.350
Benzo(a)pyrene	Mouse	1.000	Mckenzie and Angevine 1981[1]	0.135	—	0.135
Benzo(b)fluoranthene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	1.350	—	1.350
Benzo(ghi)perylene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	13.503	—	13.503

Attachment 2
Table 6
NOAELS and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Coyote

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[8] (mg/kg)	TRV (mg/kg)
Benzo(k)fluoranthene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	1.350	—	1.350
Benzoic acid	—	—	—	NA	—	NA
Benzyl alcohol	Dog	3.130	IRIS	3.126	—	3.126
Bis(2-chloroisopropyl)ether	Mouse	35.800	HEAST	4.771	—	4.771
Bis(2-ethylhexyl)phthalate	Mouse	18.330	Lamb *et al.* 1987	2.480	—	2.480
Butyl benzyl phthalate	Rat	35.380	IARC Monographs	10.686	—	10.686
Chrysene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	13.503	—	13.503
Di-N-butyl phthalate	Mouse	550.000	IRIS	74.412	—	74.412
Di-N-octyl phthalate	Rat	461.540	Peakell 1975[2]	139.384	—	139.384
Dibenzo(ah)anthracene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	0.135	—	0.135
Dibenzofuran	—	—	—	NA	—	NA
Fluoranthene	Mouse	125.000	IRIS	16.659	—	16.659
Fluorene	Mouse	125.000	IRIS	16.659	—	16.659
Hexachlorobutadiene		0.000		0.060	—	0.060
Hexachloroethane		0.000		0.302	—	0.302
Indeno(1,2,3-cd)pyrene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	1.350	—	1.350
Isophorone	Dog	150.000	IRIS	149.804	—	149.804
N-Nitrosodiphenylamine		0.000		24.162	—	24.162
Naphthalene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	135.026	—	135.026
Pentachlorophenol	Rat	3.000	IRIS	0.906	—	0.906
Phenanthrene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	135.026	—	135.026
Phenol	Rat	60.000	IRIS	18.121	—	18.121
Pyrene	Mouse	75.000	IRIS	9.996	—	9.996
Volatile Organic Compounds						
1,1,1-Trichloroethane	Mouse	1,000.000	Lane *et al.* 1982[1]	142.350	—	142.350
1,1,2,2-Tetrachloroethane		0.000		NA	—	NA
1,1-Dichloroethane	Rat	115.000	HEAST	34.733	—	34.733
1,1-Dichloroethene	Dog	2.500	Quast *et al.* 1983[1]	2.497	—	2.497

Attachment 2
Table 6
NOAELS and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Coyote

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[8] (mg/kg)	TRV (mg/kg)
1,2-Dichloroethane	Mouse	50.000	Lane *et al.* 1982[1]	7.118	—	7.118
1,2-Dichloroethene	Mouse	45.200	Palmer *et al.* 1979[1]	6.020	—	6.024
1,3-Dichloropropene	Rat	3.000	IRIS	0.906	—	0.906
2-Butanone	Rat	1,771.000	IRIS	534.882	—	534.882
2-Chloroethyl Vinyl Ether	Rat	0.085	Handbook of Toxic and Hazardous Che	0.026	—	0.026
4-Methyl-2-pentanone	Rat	25.000	Microbial Associates 1986 [1]	7.609	—	7.609
Acetone	Rat	10.000	EPA 1986	3.043	—	3.043
Benzene	Mouse	26.360	Nawrot and Staples 1979[1]	3.567	—	3.567
Chloroform	Rat	15.000	Palmer *et al.* 1979[1]	4.565	—	4.565
Methylene chloride	Rat	5.850	NCA 1982[1]	1.780	—	1.780
Styrene	Dog	200.000	IRIS	199.738	0.008	199.738
Tetrachloroethene	Mouse	14.000	IRIS	1.866	—	1.866
Toluene	Rat	25.980	Nawrot and Staples 1979[1]	5.510	—	3.515
Total xylenes	Mouse	2.060	Marks *et al.* 1982[1]	0.279	—	0.279
Trichloroethene	Mouse	146.910	Weissman 1980[2]	19.579	—	19.579
Vinyl acetate	Rat	100.000	HEAST	30.202	—	30.202
Water Quality Parameters						
Nitrate/Nitrite[7]	Rat	13.140	Shuval *et al.* 1972[2]	3.969	0.051	3.969

[1]Based on values used in ORNL 1994
[2]Based on values researched by Clemson University
[3]NOAEL for chromium +3
[4]Same as for aroclor-1254
[5]Mixed isomers for delta-BHC
[6]Values are extrapolated from benzo(a)pyrene
[7]Values are for nitrite
[8]Sullivan (1995)

HEAST - Health Effects Assessment Summary Tables
IRIS - EPA's Integrated Risk Information System

Attachment 2
Table 7
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Mule Deer

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[8] (mg/kg)	TRV (mg/kg)
Metals						
Aluminum	Mouse	1.930	Ondreicka *et al.* 1966[1]	0.149	21.331	21.331
Antimony	Mouse	0.125	Schroeder *et al.* 1968[1]	0.009	0.009	0.009
Arsenic	Mouse	0.126	Schroeder and Mitchner 1971[1]	0.120	0.120	0.120
Barium	Rat	5.060	Perry *et al.* 1983[1]	0.945	2.154	2.154
Beryllium	Rat	0.660	Schroeder and Mitchner 1975[1]	0.115	0.003	0.115
Cadmium	Mouse	0.191	Schroeder and Mitchner 1971[1]	0.015	0.048	0.048
Chromium[3]	Rat	2,737.000	Ivankovic and Preussmann 1975[1]	476.065	0.074	476.065
Cobalt	Rat	5.000	ATSDR, TP-91/10	0.856	0.565	0.856
Copper	Mink	11.710	Aulerich *et al.* 1982[1]	2.880	0.378	2.880
Lead	Rat	8.000	Azar *et al.* 1973[1]	1.391	0.076	1.391
Lithium	Rat	9.390	Marathe and Thomas 1986[1]	1.633	0.029	1.633
Magnesium	—	—	—	NA	46.422	46.422
Manganese	Rat	88.000	Laskey *et al.* 1982[1]	15.306	3.306	15.306
Mercury	Rat	0.006	Knoflach *et al.* 1986[1]	0.001	0.002	0.002
Molybdenum	Mule deer	3.230	—	2.200	2.154	2.200
Nickel	Rat	40.000	Ambrose *et al.* 1976[1]	6.957	0.197	6.957
Selenium	Mouse	0.075	Schroeder and Mitchner 1971[1]	0.006	0.054	0.054
Silver	Rat	22.220	USDHHS, ATSDR 1990[2]	3.806	0.127	3.806
Strontium	Rat	263.000	Skoryna 1981[1]	45.745	1.308	45.745
Thallium	Rat	0.007	Formigli *et al.* 1986[1]	0.001	0.114	0.114
Tin	Rat	25.000	USFWS 1989	4.282	1.681	4.282
Vanadium	Rat	0.210	Domingo *et al.* 1986[1]	0.034	0.399	0.399
Zinc	Rat	160.000	Schlicker and Cox 1968[1]	27.830	0.826	27.830

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NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Mule Deer

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[8] (mg/kg)	TRV (mg/kg)
Pesticides and PCBs						
4,4'-DDT	Rat	0.800	Fitzhugh 1948[1]	0.139	—	0.139
Aldrin	Rat	0.200	Treon and Cleveland 1955[1]	0.034	—	0.034
Aroclor-1248	Rhesus monkey	0.010	Linzey 1987[1]	0.004	—	0.004
Aroclor-1254	White-footed mouse	0.135	Linzey 1987[1]	0.009	—	0.009
Aroclor-1260[4]	Rat	6.900	Linzey 1987[1]	1.182	—	1.182
Dieldrin	Rat	0.020	Treon and Cleveland 1955[1]	0.003	—	0.003
Endosulfan sulfate	Rat	0.346	Gupta *et al.* 1978[1]	0.059	—	0.059
Endrin ketone	Rat	0.023	Kavlock *et al.* 1981[2]	0.004	—	0.004
Heptachlor	Rat	0.800	Eisler 1968[1]	0.139	—	0.139
Heptachlor epoxide	Dog	0.125	IRIS	0.071	—	0.071
Methoxychlor	Rat	4.000	Gray *et al.* 1988[1]	0.685	—	0.685
delta-BHC[5]	Rat	1.600	Grant *et al.* 19771	0.278	—	0.278
gamma-BHC (Lindane)	Rat	8.000	Palmer *et al.* 1978[1]	1.391	—	1.391
Semivolatile Organic Compounds						
1,2,4-Trichlorobenzene	Rat	14.800	IRIS	2.535	—	2.535
1,4-Dichlorobenzene		0.000		42.825	—	42.825
2-Chlorophenol		0.000		0.856	—	0.856
2-Methylnaphthalene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	77.285	—	77.285
2-Methylphenol		0.000		8.565	—	8.565
4-Nitroaniline		0.000		7.257	—	7.257
Acenaphthene	Mouse	175.000	IRIS	77.285	—	77.285
Acenaphthylene	—	—	—	NA	—	NA
Anthracene	Mouse	1,000.000	IRIS	75.590	—	75.590
Benzo(a)anthracene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	0.773	—	0.773
Benzo(a)pyrene	Mouse	1.000	Mckenzie and Angevine 1981[1]	0.077	—	0.077
Benzo(b)fluoranthene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	0.773	—	0.773
Benzo(ghi)perylene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	7.728	—	7.728

Attachment 2
Table 7
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Mule Deer

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[8] (mg/kg)	TRV (mg/kg)
Benzo(k)fluoranthene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	0.773	—	0.773
Benzoic acid	—	—	—	NA	—	NA
Benzyl alcohol	Dog	3.130	IRIS	1.773	—	1.773
Bis(2-chloroisopropyl)ether	Mouse	35.800	HEAST 1994	2.706	—	2.706
Bis(2-ethylhexyl)phthalate	Mouse	18.330	Lamb *et al.* 1987	1.417	—	1.417
Butyl benzyl phthalate	Rat	35.380	IARC Monographs	6.061	—	6.061
Chrysene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	7.728	—	7.728
Di-N-butyl phthalate	Mouse	550.000	Lamb *et al.* 1987	42.527	—	42.527
Di-N-octyl phthalate	Rat	461.540	Peakall 1975[2]	79.055	—	79.055
Dibenzo(ah)anthracene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	0.077	—	0.077
Dibenzofuran	—	—	—	NA	—	NA
Fluoranthene	Mouse	125.000	IRIS	9.449	—	9.449
Fluorene	Mouse	125.000	IRIS	9.449	—	9.449
Hexachlorobutadiene		0.000		0.034	—	0.034
Hexachloroethane		0.000		0.171	—	0.171
Indeno(1,2,3-cd)pyrene	Mouse	1.000	Mckenzie and Angevine 1981[1]	0.773	—	0.773
Isophorone	Dog	150.000	IRIS	84.965	—	84.965
N-Nitrosodiphenylamine		0.000		13.704	—	13.704
Naphthalene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	77.285	—	77.285
Pentachlorophenol	Rat	3.000	IRIS	0.514	—	0.514
Phenanthrene[6]	Mouse	1.000	Mckenzie and Angevine 1981[1]	77.285	—	77.285
Phenol	Rat	60.000	IRIS	10.278	—	10.278
Pyrene	Mouse	75.000	IRIS	5.669	—	5.669
Volatile Organic Compounds						
1,1,1-Trichloroethane	Mouse	1,000.000	Lane *et al* 1982[1]	81.354	—	81.354
1,1,2,2-Tetrachloroethane		0.000		NA	—	NA
1,1-Dichloroethane	Rat	115.000	HEAST	19.699	—	19.699
1,1-Dichloroethene	Dog	2.500	Quast *et al.* 1983[1]	1.416	—	1.416

Attachment 2
Table 7
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Mule Deer

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[8] (mg/kg)	TRV (mg/kg)
1,2-Dichloroethane	Mouse	50.000	Lane *et al.* 1982[1]	4.068	—	4.068
1,2-Dichloroethene	Mouse	45.200	Palmer *et al.* 1979[1]	3.417	—	3.417
1,3-Dichloropropene	Rat	3.000	IRIS	0.514	—	0.514
2-Butanone	Rat	1,771.000	IRIS	303.372	—	303.372
2-Chloroethyl vinyl ether	Rat	0.085	Handbook of Toxic and Hazardous Che	0.015	—	0.015
4-Methyl-2-pentanone	Rat	25.000	Microbial Associates 1986 [1]	4.348	—	4.348
Acetone	Rat	10.000	EPA 1986	1.739	—	1.739
Benzene	Mouse	26.360	Nawrot and Staples 1979[1]	2.038	—	2.038
Chloroform	Rat	15.000	Palmer *et al.* 1979[1]	2.609	—	2.609
Methylene chloride	Rat	5.850	NCA 1982[1]	1.018	—	1.018
Styrene	Dog	200.000	IRIS	113.287	—	113.287
Tetrachloroethene	Mouse	14.000	IRIS	1.058	—	1.058
Toluene	Rat	25.980	Nawrot and Staples 1979[1]	2.008	—	2.008
Total xylenes	Mouse	2.060	Marks *et al.* 1982[1]	0.159	—	0.159
Trichloroethene	Mouse	146.910	Weissman 1980[2]	11.105	—	11.105
Vinyl acetate	Rat	100.000	HEAST	17.130	—	17.130
Water Quality Parameters						NA
Nitrate/Nitrite[7]	Rat	13.140	Shuval *et al.* 1972[2]	2.251	0.006	2.251

[1]Based on values used in ORNL 1994
[2]Based on values researched by Clemson University
[3]NOAEL for chromium +3
[4]Same as for aroclor-1254
[5]Mixed isomers for delta-BHC
[6]Values are extrapolated from benzo(a)pyrene
[7]Values are for nitrite
[8]Sullivan (1995)

HEAST - Health Effects Assessment Summary Tables
IRIS - EPA's Integrated Risk Information System

Attachment 2
Table 8
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Red-tailed Hawk

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
Metals						
Aluminum	Ringed dove	111.400	Carriere *et al.* 1986[1]	58.820	53.637	58.820
Antimony	—	—	—	NA	—	NA
Arsenic	Brown-headed cowbird	2.460	USFWS 1969[1]	0.885	0.020	0.885
Barium	Chicken	20.860	Johnson *et al.* 1960[1]	10.142	1.566	10.142
Beryllium	—	—	—	NA	0.006	0.006
Cadmium	Mallard	1.450	White and Finley 1978[1]	1.494	0.256	1.494
Chromium	Black duck	1.000	Haseltine *et al.* [1]	1.058	0.736	1.058
Cobalt	Chicken	0.017	Galani and Alibhai 1990[2]	0.019	0.028	0.028
Copper	Chicken	33.210	Mehring *et al.* 1960[1]	16.147	2.199	16.147
Lead	American kestrel	3.850	Pattee 1984[1]	1.846	0.326	1.846
Lithium	—	—	—	NA	0.037	0.037
Magnesium	—	—	—	NA	80.217	80.217
Manganese	Turkey poults	32.360	Vohra and Kratzer 1968[2]	12.701	2.685	12.701
Mercury	Mallard	0.006	Heinz 1979[1]	0.007	—	0.007
Molybdenum	Chicken	2.380	Kratzer 1958[2]	1.197	0.051	1.197
Nickel	Mallard duckling	77.400	Cain and Pafford 1981[1]	70.054	2.077	70.054
Selenium	Mallard	0.400	Heinz *et al.* 1987[1]	0.393	0.259	0.393
Silver	Turkey	165.610	Jensen, Peterson, Falen 1974[2]	1,105.027	—	1,105.027
Strontium	Chicken four weeks	8.280	Weber *et al.* 1968[2]	6.784	1.673	6.784
Thallium	—	—	—	NA	0.003	0.003
Tin	—	—	—	NA	7.914	7.914
Vanadium	Coturnix	0.670	Hill and Camardese 1986[2]	0.295	0.105	0.295
Zinc	Mallard	3.000	Gasaway and Buss 1972[1]	3.090	10.863	10.863

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NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Red-tailed Hawk

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
Pesticides and PCBs						
4,4'-DDT	Brown pelican	0.000	Anderson *et al.* 1975[1]	0.000	—	0.000
Aldrin[3]	Barn owl	0.077	Mendenhall *et al.* 1983[1]	0.059	—	0.059
Aroclor-1248	Ring-necked pheasant	0.180	Dahlgren *et al.* 1972[1]	0.173	—	0.173
Aroclor-1254	Ring-necked pheasant	0.180	Dahlgren *et al.* 1972[1]	0.173	—	0.173
Aroclor-1260	Coturnix	2.000	Dahlgren *et al.* 1972[1]	0.881	—	0.881
Dieldrin	Barn-owl	0.077	Mendenhall *et al.* 1983[1]	0.059	—	0.059
Endosulfan sulfate	—	—	—	NA	—	NA
Endrin ketone	—	—	—	NA	—	NA
Heptachlor	Coturnix	0.074	Hill and Camardese 1986[2]	0.033	—	0.033
Heptachlor epoxide	Woodcock	0.007	No author listed	0.004	—	0.004
Methoxychlor	—	—	—	NA	—	NA
delta-BHC	Japanese quail	0.567	Vos *et al.* 1971[1]	0.289	—	0.289
gamma-BHC (Lindane)	Mallard	2.000	Chakravarty and Lahiri 1986[1]	1.923	—	1.923
Semivolatile Organic Compounds						
1,2,4-Trichlorobenzene	—	—	—	NA	—	NA
1,4-Dichlorobenzene	—	—	—	NA	—	NA
2,4-Dimethylphenol	—	—	—	NA	—	NA
2-Chlorophenol		0.000		19.885	—	19.885
2-Methylnaphthalene	Chicken	33.100	Brunstrom *et al.* 1990[2]	37.215	—	37.215
2-Methylphenol		0.000		NA	—	NA
4-Methylphenol	—	—	—	NA	—	NA
4-Nitroaniline		0.000		NA	—	NA
Acenaphthene	Chicken	33.100	Brunstrom *et al.* 1990[2]	37.215	—	37.215
Acenaphthylene	—	—	—	NA	—	NA
Anthracene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.037	—	0.037
Benzo(a)anthracene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.372	—	0.372
Benzo(a)pyrene	Chicken	0.033	Brunstrom *et al.* 1990[2]	0.037	—	0.037

Attachment 2
Table 8
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Red-tailed Hawk

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
Benzo(b)fluoranthene	Chicken	0.330	Brunstrom *et al.* 1990[2]	0.371	—	0.371
Benzo(ghi)perylene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.372	—	0.372
Benzo(k)fluoranthene	Chicken	0.033	Brunstrom *et al.* 1990[2]	0.037	—	0.037
Benzoic acid	—	—	—	NA	—	NA
Benzyl alcohol	—	—	—	NA	—	NA
Bis(2-chloroisopropyl)ether	—	—	—	NA	—	NA
Bis(2-ethylhexyl)phthalate	Ringed dove	1.110	Peakall 1974[1]	0.577	—	0.577
Butyl benzyl phthalate	Chicken embryo	96.550	Bower *et al.* 1970[2]	108.554	—	108.554
Chrysene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.372	—	0.372
Di-N-butyl phthalate	Ringed dove	0111	Peakall 1974[1]	0.058	—	0.058
Di-N-octyl phthalate	Chicken	42.240	Bower *et al.* 1970[2]	47.492	—	47.492
Dibenzo(ah)anthracene[4]	Chicken	0.033	Brunstrom *et al.* 1990[2]	0.037	—	0.037
Dibenzofuran	—	—	—	NA	—	NA
Diethyl Phthalate	Chicken	53.100	Bower et al. 1970[2]	59.702	—	59.702
Fluoranthene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.372	—	0.372
Fluorene	Chicken	0.330	Brunstrom *et al.* 1990[2]	0.371	—	0.371
Hexachlorobutadiene		0.000	Brunstrom *et al.* 1990[2]	2.196	—	2.196
Hexachloroethane		0.000	Brunstrom *et al.* 1990[2]	NA	—	NA
Indeno(1,2,3-cd)pyrene	Chicken	0.828	Brunstrom *et al.* 1990[2]	0.093	—	0.093
Isophorone	—	—	—	NA	—	NA
N-Nitrosodiphenylamine		0.000		NA	—	NA
Naphthalene	Chicken	33.100	Brunstrom *et al.* 1990[2]	37.215	—	37.215
Pentachlorophenol	Mallard	16.920	Nebeker *et al.* 1994[2]	8.837	—	8.837
Phenanthrene	Chicken	0.033	Brunstrom *et al.* 1990[2]	0.037	—	0.037
Phenol	Agelaius phoeniceus	50.300	Schafer *et al.* 1983[2]	19.885	—	19.885
Pyrene	Chicken	0.331	Brunstrom *et al.* 1990[2]	0.372	—	0.372
Volatile Organic Compounds						
1,1,1-Trichloroethane	Chicken	1.150	Elovaara *et al.* 1979[2]	1.293	—	1.293

Attachment 2
Table 8
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Red-tailed Hawk

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
1,1,2,2-Tetrachloroethane		0.000		NA	—	NA
1,1-Dichloroethane	—	—	—	NA	—	NA
1,1-Dichloroethene	—	—	—	NA	—	NA
1,2-Dichloroethane	Chicken	17.200	Alumot *et al.* 1976[1]	19.314	—	19.314
1,2-Dichloroethene	—	—	—	NA	—	NA
1,3-Dichloropropene	—	—	—	NA	—	NA
2-Butanone	—	—	—	NA	—	NA
2-Chloroethyl vinyl ether	—	—	—	NA	—	NA
2-Hexanone	—	—	—	NA	—	NA
4-Methyl-2-pentanone	—	—	—	NA	—	NA
Acetone	Chicken	78.000	McLaughlin *et al.* 1965[2]	87.698	—	87.698
Benzene	Chicken	7.586	McLaughlin *et al.* 1965[2]	8.530	—	8.529
Carbon disulfide	—	—	—	NA	—	NA
Carbon tetrachloride	—	—	—	45.738	—	45.738
Chlorobenzene	—	—	—	NA	—	NA
Chloroethane	—	—	—	NA	—	NA
Chloroform	—	—	—	NA	—	NA
Chloromethane	—	—	—	NA	—	NA
Ethylbenzene	—	—	—	NA	—	NA
Methylene chloride	Chicken	0.733	Elovaara *et al.* 1979[2]	0.824	—	0.824
Styrene	Chicken	8.970	Elovaara *et al.* 1979[2]	10.085	—	10.085
Tetrachloroethene	Chicken	1.430	Elovaara *et al.* 1979[2]	1.608	—	1.608
Toluene	Chicken	3.660	Elovaara *et al.* 1979[2]	4.459	—	4.459
Total xylenes	Coturnix	267.000	Hill and Camardese 1986[2]	117.633	—	117.633
Trichloroethene	Chicken	1.133	Elovaara *et al.* 1979[2]	1.274	—	1.274
Vinyl acetate	—	—	—	NA	—	NA
Vinyl chloride	—	—	—	NA	—	NA
cis-1,3-Dichloropropene	—	—	—	NA	—	NA

Attachment 2
Table 8
NOAELs and TRVs Used in Estimating Risks to Wildlife Receptors from Exposure to PCOCs
Red-tailed Hawk

PCOC	Test Species	Test Species NOAEL (mg/kg/day)	Source	Receptor Species NOAEL (mg/kg/day)	Background Intake[6] (mg/kg)	TRV (mg/kg)
Trans-1,2-Dichloroethene	—	—	—	NA	—	NA
O-Xylene	—	—	—	NA	—	NA
Water Quality Parameters						
Nitrate/Nitrite[5]	Chicken	1.530	Adams *et al.* 1966[2]	0.962	0.009	0.962

[1]Based on values used in ORNL 1994
[2]Based on values researched by Clemson University
[3]Dieldrin values are used for aldrin
[4]Dibenzo(ah)anthracene values are extrapolated from benzo(a)pyrene
[5]Values are for nitrite
[6]Sullivan (1995)

Attachment 2
Table 9
Phytotoxicity Data Derived from Experiments Conducted in Soil

Chemical	Soil Type	% OM	pH	Plant Species	DUR	Soil NOEC	Soil LOEL	Growth Parameter	Reference
Inorganics									
Cyanide (NaCN)	Yolo Loam Soil and $CaCO_3$	NA	7.5	Bush beans	11	NA	50 LOAEC	Dry weight	Wallace *et al.* 1977
Organics									
1,1,1-Trichloroethane	Agricultural loam	1.6	7.5	Lettuce	14	NA	200	EC_{20}[1]	Hulzebos *et al.* 1993
1,1,2,2-Tetrachloroethane[2]	Agricultural loam	1.6	7.5	Lettuce	14	NA	200	EC_{20}[1]	Hulzebos *et al.* 1993
1,1-Dichloroethene[3]	Agricultural loam	1.6	7.5	Lettuce	14	NA	200	EC_{20}[1]	Hulzebos *et al.* 1993
1,2-Dichloroethane[2]	Agricultural loam	1.6	7.5	Lettuce	14	NA	200	EC_{20}[1]	Hulzebos *et al.* 1993
1,2-Dichloroethene[3]	Agricultural loam	1.6	7.5	Lettuce	14	NA	200	EC_{20}[1]	Hulzebos *et al.* 1993
1,4-Dichlorobenzene	Agricultural loam	1.6	7.5	Lettuce	14	NA	50	EC_{20}[1]	Hulzebos *et al.* 1993
2-Chlorophenol	Agricultural loam	1.6	7.5	Lettuce	14	NA	10	EC_{20}[1]	Hulzebos *et al.* 1993
2-Methylphenol	Agricultural loam	1.6	7.5	Lettuce	14	NA	20	EC_{20}[1]	Hulzebos *et al.* 1993
4-Methylphenol[4]	Agricultural loam	1.6	7.5	Lettuce	14	NA	20	EC_{20}[1]	Hulzebos *et al.* 1993
Acenaphthene	Agricultural loam	1.6	7.5	Lettuce	14	NA	5	EC_{20}[1]	Hulzebos *et al.* 1993
Anthracene	Loam, Cornish grit, and sand	<3%	NA	*Sorghum bicolor*	21	>1,000	NA	Shoot weight and phytoxicity	Windeatt *et al.* 1991
Anthracene	Loam, Cornish grit, and sand	<3%	NA	Sunflower	21	10	NA	Shoot weight and phytoxicity	Windeatt *et al.* 1991
Anthracene	Loam, Cornish grit, and sand	<3%	NA	Mungbean	21	10	NA	Shoot weight and phytoxicity	Windeatt *et al.* 1991
Chlorobenzene	Agricultural loam	1.6	7.5	Lettuce	14	na	200	EC_{20}[1]	Hulzebos *et al.* 1993
Chloroethane[2]	Agricultural loam	1.6	7.5	Lettuce	14	na	200	EC_{20}[1]	Hulzebos *et al.* 1993
Dibenzofuran	Agricultural loam	1.6	7.5	Lettuce	14	na	49.6	EC_{20}[1]	Hulzebos *et al.* 1993
Diethyl phthalate	Agricultural loam	1.6	7.5	Lettuce	14	na	30	EC_{20}[1]	Hulzebos *et al.* 1993
Hexachloroethane	Loam, Cornish grit, and sand	<3%	NA	*Sorghum*	21	10	NA	Total fresh weight	Windeatt *et al.* 1991
Hexachloroethane	Loam, Cornish grit, and sand	<3%	NA	Sunflower	21	100	NA	Total fresh weight	Windeatt *et al.* 1991
Hexachloroethane	Loam, Cornish grit, and sand	<3%	NA	Mungbean	21	100	NA	Total fresh weight	Windeatt *et al.* 1991
Naphthalene	Loam, Cornish grit, and sand	<3%	NA	*Sorghum*	21	100	NA	Total fresh weight	Windeatt *et al.* 1991
Naphthalene	Loam, Cornish grit, and sand	<3%	NA	Sunflower	21	>1,000	NA	Total fresh weight	Windeatt *et al.* 1991
Naphthalene	Loam, Cornish grit, and sand	<3%	NA	Soybean	21	100	NA	Total fresh weight	Windeatt *et al.* 1991
Pentachlorophenol	Loam, Cornish grit, and sand	<3%	NA	*Sorghum*	21	2	NA	Total fresh weight	Windeatt *et al.* 1991
Pentachlorophenol	Loam, Cornish grit, and sand	<3%	NA	Sunflower	21	1	NA	Total fresh weight	Windeatt *et al.* 1991

Attachment 2
Table 9
Phytotoxicity Data Derived from Experiments Conducted in Soil

Chemical	Soil Type	% OM	pH	Plant Species	DUR	Soil NOEC	Soil LOEL	Growth Parameter	Reference
Pentachlorophenol	Loam, Cornish grit, and sand	<3%	NA	Soybean	21	10	NA	Total fresh weight	Windeatt *et al.* 1991
Pentachlorophenol	Loam, Cornish grit, and sand	<3%	NA	Oat	21	1	NA	Total fresh weight	Windeatt *et al.* 1991
Pentachlorophenol	Loam, Cornish grit, and sand	<3%	NA	Tomato	21	1	NA	Total fresh weight	Windeatt *et al.* 1991
Phenol	Agricultural loam	1.6	7.5	Lettuce	14	NA	20	EC_{20}[1]	Hulzebos *et al.* 1993
Styrene	Agricultural loam	1.6	7.5	Lettuce	14	NA	60	EC_{20}[1]	Hulzebos *et al.* 1993
Tetrachloroethene	Agricultural loam	1.6	7.5	Lettuce	14	NA	200	EC_{20}[1]	Hulzebos *et al.* 1993
Total xylenes[5]	Agricultural loam	1.6	7.5	Lettuce	14	NA	200	EC_{20}[1]	Hulzebos *et al.* 1993
Trichloroethene[3]	Agricultural loam	1.6	7.5	Lettuce	14	NA	200	EC_{20}[1]	Hulzebos *et al.* 1993

[1]The EC_{50} values in Hulzebos *et al.* (1993) were extrapolated to EC_{20} values by dividing by a factor of 5 (ORNL 1994).
[2]Soil benchmark is based on 1,1,1-trichloroethane.
[3]Soil benchmark is based on 1,1,1-trichloroethane and tetrachloroethene.
[4]Soil benchmark is based on 2-methylphenol.
[5]Soil benchmark is based on o-xylene.
All chemical concentrations in soils and plants are mg of the element/kg medium.
Cation exchange capacity (CEC) not reported in these studies.

EC20 - benchmark chemical concentration based on 20% reduction in plant growth
OM - % organic matter in the soil
DUR (D) - Exposure duration in days
NOEC - no observed effects concentration
LOEL - lowest observed effects level
LOAEC - lowest observed adverse effects concentration
NA - data not available

Attachment 2
Table 10
Vegetation TRVs (Soil)

Subsurface Soil PCOC[1]	Vegetation Benchmark[2]	Units	Vegetation Benchmark Criteria	Vegetation Benchmark Source	Background UCL_{95} Concentration[3]	Units	Vegetation TRV
Metals							
Aluminum	50.00	mg/kg	EC20	ORNL 1994	14,600.00	mg/kg	14,600.00
Antimony	5.00	mg/kg	EC20	ORNL 1994	7.14	mg/kg	7.14
Arsenic	10.00	mg/kg	EC20	ORNL 1994	4.42	mg/kg	10.00
Barium	500.00	mg/kg	EC20	ORNL 1994	112.00	mg/kg	500.00
Beryllium	10.00	mg/kg	EC20	ORNL 1994	5.46	mg/kg	10.00
Cadmium	3.00	mg/kg	EC20	ORNL 1994	0.68	mg/kg	3.00
Chromium	1.00	mg/kg	EC20	ORNL 1994	22.90	mg/kg	22.90
Cobalt	25.00	mg/kg	EC20	ORNL 1994	8.55	mg/kg	25.00
Copper	100.00	mg/kg	EC20	ORNL 1994	14.70	mg/kg	100.00
Lead	50.00	mg/kg	EC20	ORNL 1994	12.00	mg/kg	50.00
Lithium	2.00	mg/kg	EC20	ORNL 1994	—	—	2.00
Manganese	500.00	mg/kg	EC20	ORNL 1994	275.00	mg/kg	500.00
Mercury	0.30	mg/kg	EC20	ORNL 1994	0.27	mg/kg	0.30
Molybdenum	2.00	mg/kg	EC20	ORNL 1994	16.90	mg/kg	16.90
Nickel	30.00	mg/kg	EC20	ORNL 1994	23.30	mg/kg	30.00
Selenium	1.00	mg/kg	EC20	ORNL 1994	1.45	mg/kg	1.45
Silver	2.00	mg/kg	EC20	ORNL 1994	7.42	mg/kg	7.42
Strontium	NA	—	—	—	62.90	mg/kg	62.90
Vanadium	2.00	mg/kg	EC20	ORNL 1994	36.30	mg/kg	36.30
Zinc	50.00	mg/kg	EC20	ORNL 1994	44.90	mg/kg	50.00
Pesticides, Herbicides, and PCBs							
4,4'-DDT	NA	—	—	—	—	—	NA
alpha-BHC	NA	—	—	—	—	—	NA
Aroclor-1254[4]	40,000.00	µg/kg	EC20	ORNL 1994	—	—	40,000.00
Aroclor-1260[4]	40,000.00	µg/kg	EC20	ORNL 1994	—	—	40,000.00
Heptachlor epoxide	NA	—	—	—	—	—	NA
Semivolatile Organic Compounds							
1,4-Dichlorobenzene	50,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	50,000.00

Attachment 2
Table 10
Vegetation TRVs (Soil)

Subsurface Soil PCOC[1]	Vegetation Benchmark[2]	Units	Vegetation Benchmark Criteria	Vegetation Benchmark Source	Background UCL_{95} Concentration[3]	Units	Vegetation TRV
2-Chlorophenol	10,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	10,000.00
2-Methylnaphthalene	NA	—	—	—	—	—	NA
2-Methylphenol	20,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	20,000.00
4-Methylphenol[6]	20,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	20,000.00
4-Nitroaniline	NA	—	—	—	—	—	NA
Acenaphthene	5,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	5,000.00
Acenaphthylene	NA	—	—	—	—	—	NA
Anthracene	10,000.00	µg/kg	NOEC	Windeatt *et al.* 1991	—	—	10,000.00
Benzo(a)anthracene	NA	—	—	—	—	—	NA
Benzo(a)pyrene	NA	—	—	—	—	—	NA
Benzo(a)fluoranthene	NA	—	—	—	—	—	NA
Benzo(ghi)perylene	NA	—	—	—	—	—	NA
Benzo(k)fluoranthene	NA	—	—	—	—	—	NA
Benzoic acid	NA	—	—	—	—	—	NA
bis(2-ethylhexyl)phthalate[7]	200,000.00	µg/kg	EC20	ORNL 1994	—	—	200,000.00
Butyl benzyl phthalate	NA	—	—	—	—	—	NA
Chrysene	NA	—	—	—	—	—	NA
Di-N-butyl phthalate	200,000.00	µg/kg	EC20	ORNL 1994	—	—	200,000.00
Di-N-octyl phthalate[7]	200,000.00	µg/kg	EC20	ORNL 1994	—	—	200,000.00
Dibenzo(ah)anthracene	NA	—	—	—	—	—	NA
Dibenzofuran	49,600.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	49,600.00
Diethyl phthalate	30,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	30,000.00
Fluoranthene	NA	—	—	—	—	—	NA
Fluorene	NA	—	—	—	—	—	NA
Hexachlorobutadiene	NA	—	—	—	—	—	NA
Hexachloroethane	10,000.00	µg/kg	NOEC	Windeatt *et al.* 1991	—	—	10,000.00
Indeno(1,2,3-cd)pyrene	NA	—	—	—	—	—	NA
Isophorone	NA	—	—	—	—	—	NA
N-Nitrosodiphenylamine	NA	—	—	—	—	—	NA

Attachment 2
Table 10
Vegetation TRVs (Soil)

Subsurface Soil PCOC[1]	Vegetation Benchmark[2]	Units	Vegetation Benchmark Criteria	Vegetation Benchmark Source	Background UCL_{95} Concentration[3]	Units	Vegetation TRV
Naphthalene	100,000.00	µg/kg	NOEC	Windeatt *et al.* 1991	—	—	100,000.00
Pentachlorophenol	1,000.00	µg/kg	NOEC	Windeatt *et al.* 1991	—	—	1,000.00
Phenanthrene	NA	—	—	—	—	—	NA
Phenol	20,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	20,000.00
Pyrene	NA	—	—	—	—	—	NA
Volatile Organic Compounds							
1,1,1-Trichloroethane	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
1,1,2,2-Tetrachloroethane[8]	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
1,1-Dichloroethene[9]	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
1,2-Dichloroethane[8]	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
1,2-Dichloroethene[9]	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
2-Butanone	NA	—	—	—	—	—	NA
2-Chloroethyl vinyl ether	NA	—	—	—	—	—	NA
4-Methyl-2-pentanone	NA	—	—	—	—	—	NA
Acetone	NA	—	—	—	—	—	NA
Benzene	NA	—	—	—	—	—	NA
Carbon disulfide	NA	—	—	—	—	—	NA
Carbon tetrachloride	NA	—	—	—	—	—	NA
Chlorobenzene	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
Chloroethane[8]	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
Chloroform	NA	—	—	—	—	—	NA
cis-1,3-Dichloropropene	NA	—	—	—	—	—	NA
Ethylbenzene	NA	—	—	—	—	—	NA
Methylene chloride	NA	—	—	—	—	—	NA
Styrene	60,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	60,000.00
Tetrachloroethene	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
Toluene	200,000.00	µg/kg	EC20	ORNL 1994	—	—	200,000.00
Total xylenes[10]	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
Trichloroethene[9]	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00

Attachment 2
Table 10
Vegetation TRVs (Soil)

Subsurface Soil PCOC[1]	Vegetation Benchmark[2]	Units	Vegetation Benchmark Criteria	Vegetation Benchmark Source	Background UCL_{95} Concentration[3]	Units	Vegetation TRV
Water Quality Parameters							
Cyanide (NaCN)	50.00	mg/kg	LOAEC	Wallace, A. *et al.* 1977	—	—	50.00
Nitrate/Nitrite	NA	—	—	—	19.1	mg/kg	19.10

[1]Radionuclides are not evaluated in the vegetation screen; instead, they are evaluated for small mammals because small mammals are the limiting species.
[2]Soil benchmark values are rounded to one significant figure. Values from Hulzebos *et al.* (1993) are based on a 14-day test because it is more appropriate for chronic exposure.
[3]Background UCL_{95} is based on a 1-tailed test (Sullivan 1995).
[4]Soil benchmark is based on polychlorinated biphenyls (PCBs).
[5]The EC50 values in Hulzebos *et al.* (1993) were extrapolated to EC20 values by dividing by a factor of 5 (ORNL 1994).
[6]Soil benchmark is based on 2-methylphenol.
[7]Soil benchmark is based on di-N-butyl phthalate.
[8]Soil benchmark is based on 1,1,1-trichloroethane.
[9]Soil benchmark is based on 1,1,1-trichloroethane and tetrachloroethene.
[10]Soil benchmark is based on o-xylene.

PCOC - potential chemical of concern
UCL_{95} - 95% upper confidence limit of the true mean
TRV - toxicity reference value
NA - soil benchmark not available
EC20 - benchmark chemical concentration based on 20% reduction in plant growth
ORNL - Oak Ridge National Laboratory (1994)
NOEC - no observed effect concentration
LOAEC - lowest observed effect concentration

Attachment 2
Table 11
Vegetation TRVs (Sediment)[1]

Analyte[1]	Vegetation Benchmark[2]	Units	Vegetation Benchmark Criteria	Vegetation Benchmark Source	Background UCL_{95} Concentration[3]	Units	Vegetation TRV
Metals							
Aluminum	50.00	mg/kg	EC20	ORNL 1994	6,957	mg/kg	6,957
Antimony	5.00	mg/kg	EC20	ORNL 1994	8	mg/kg	7.67
Arsenic	10	mg/kg	EC20	ORNL 1994	3	mg/kg	10.00
Barium	500.00	mg/kg	EC20	ORNL 1994	90	mg/kg	500
Beryllium	10.00	mg/kg	EC20	ORNL 1994	1	mg/kg	10.00
Cadmium	3.00	mg/kg	EC20	ORNL 1994	1	mg/kg	3.00
Chromium	1.00	mg/kg	EC20	ORNL 1994	10	mg/kg	9.80
Cobalt	25.00	mg/kg	EC20	ORNL 1994	7	mg/kg	25.00
Copper	100.00	mg/kg	EC20	ORNL 1994	12	mg/kg	100.00
Lead	50.00	mg/kg	EC20	ORNL 1994	30	mg/kg	50.00
Lithium	2.00	mg/kg	EC20	ORNL 1994	9	—	8.60
Manganese	500.00	mg/kg	EC20	ORNL 1994	1,800	mg/kg	1,800.04
Mercury	0.30	mg/kg	EC20	ORNL 1994	0.1	mg/kg	0.30
Molybdenum	2.00	mg/kg	EC20	ORNL 1994	11	mg/kg	11.00
Nickel	30.00	mg/kg	EC20	ORNL 1994	8	mg/kg	30.00
Selenium	1.00	mg/kg	EC20	ORNL 1994	1	mg/kg	1.00
Silver	2.00	mg/kg	EC20	ORNL 1994	3	mg/kg	2.74
Strontium	NA	—	—	—	50	mg/kg	49.90
Thallium	1.00	mg/kg	EC18	ORNL 1992	1		
Tin	50.00	mg/kg	EC19	ORNL 1993	22		
Vanadium	2.00	mg/kg	EC20	ORNL 1994	22	mg/kg	21.60
Zinc	50.00	mg/kg	EC20	ORNL 1994	72	mg/kg	71.95
Pesticides, Herbicides, and PCBs							
4,4'-DDT	NA	—	—	—	—	—	NA
alpha-BHC	NA	—	—	—	—	—	NA
Aroclor-1254[4]	40,000.00	µg/kg	EC20	ORNL 1994	—	—	40,000.00
Aroclor-1260[4]	40,000.00	µg/kg	EC20	ORNL 1994	—	—	40,000.00
Heptachlor epoxide	NA	—	—	—	—	—	NA
Semivolatile Organic Compounds							
1,4-Dichlorobenzene	50,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	50,000.00
2-Chlorophenol	10,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	10,000.00
2-Methylnaphthalene	NA	—	—	—	—	—	NA
2-Methylphenol	20,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	20,000.00
4-Methylphenol[6]	20,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	20,000.00

Attachment 2
Table 11
Vegetation TRVs (Sediment)[1]

Analyte[1]	Vegetation Benchmark[2]	Units	Vegetation Benchmark Criteria	Vegetation Benchmark Source	Background UCL_{95} Concentration[3]	Units	Vegetation TRV
4-Nitroaniline	NA	—	—	—	—	—	NA
Acenaphthene	5,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	5,000.00
Acenaphthylene	NA	—	—	—	—	—	NA
Anthracene	10,000.00	µg/kg	NOEC	Windeatt *et al.* 1991	—	—	10,000.00
Benzo(a)anthracene	NA	—	—	—	—	—	NA
Benzo(a)pyrene	NA	—	—	—	—	—	NA
Benzo(a)fluoranthene	NA	—	—	—	—	—	NA
Benzo(ghi)perylene	NA	—	—	—	—	—	NA
Benzo(k)fluoranthene	NA	—	—	—	—	—	NA
Benzoic acid	NA	—	—	—	—	—	NA
bis(2-ethylhexyl)phthalate[7]	200,000.00	µg/kg	EC20	ORNL 1994	—	—	200,000.00
Butyl benzyl phthalate	NA	—	—	—	—	—	NA
Chrysene	NA	—	—	—	—	—	NA
Di-N-butyl phthalate	200,000.00	µg/kg	EC20	ORNL 1994	—	—	200,000.00
Di-N-octyl phthalate[7]	200,000.00	µg/kg	EC20	ORNL 1994	—	—	200,000.00
Dibenzo(ah)anthracene	NA	—	—	—	—	—	NA
Dibenzofuran	50,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	50,000.00
Diethyl phthalate	30,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	30,000.00
Fluoranthene	NA	—	—	—	—	—	NA
Fluorene	NA	—	—	—	—	—	NA
Hexachlorobutadiene	NA	—	—	—	—	—	NA
Hexachloroethane	10,000.00	µg/kg	NOEC	Windeatt *et al.* 1991	—	—	10,000.00
Indeno(1,2,3-cd)pyrene	NA	—	—	—	—	—	NA
Isophorone	NA	—	—	—	—	—	NA
N-Nitrosodiphenylamine	NA	—	—	—	—	—	NA
Naphthalene	100,000.00	µg/kg	NOEC	Windeatt *et al.* 1991	—	—	100,000.00
Pentachlorophenol	1,000.00	µg/kg	NOEC	Windeatt *et al.* 1991	—	—	1,000.00
Phenanthrene	NA	—	—	—	—	—	NA
Phenol	20,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	20,000.00
Pyrene	NA	—	—	—	—	—	NA
Volatile Organic Compounds							
1,1,1-Trichloroethane	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
1,1,2,2-Tetrachloroethane[8]	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
1,1-Dichloroethene[9]	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
1,2-Dichloroethane[8]	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00

Attachment 2
Table 11
Vegetation TRVs (Sediment)[1]

Analyte[1]	Vegetation Benchmark[2]	Units	Vegetation Benchmark Criteria	Vegetation Benchmark Source	Background UCL_{95} Concentration[3]	Units	Vegetation TRV
1,2-Dichloroethene[9]	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
2-Butanone	NA	—	—	—	—	—	NA
2-Chloroethyl vinyl ether	NA	—	—	—	—	—	NA
4-Methyl-2-pentanone	NA	—	—	—	—	—	NA
Acetone	NA	—	—	—	—	—	NA
Benzene	NA	—	—	—	—	—	NA
Carbon disulfide	NA	—	—	—	—	—	NA
Carbon tetrachloride	NA	—	—	—	—	—	NA
Chlorobenzene	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
Chloroethane[8]	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
Chloroform	NA	—	—	—	—	—	NA
cis-1,3-Dichloropropene	NA	—	—	—	—	—	NA
Ethylbenzene	NA	—	—	—	—	—	NA
Methylene chloride	NA	—	—	—	—	—	NA
Styrene	60,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	60,000.00
Tetrachloroethene	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
Toluene	200,000.00	µg/kg	EC20	ORNL 1994	—	—	200,000.00
Total xylenes[10]	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
Trichloroethene[9]	200,000.00	µg/kg	EC20[5]	Hulzebos *et al.* 1993	—	—	200,000.00
Water Quality Parameters							
Cyanide (NaCN)	50.00	mg/kg	LOAEC	Wallace, A. *et al.* 1977	—	—	50.00
Nitrate/Nitrite	NA	—	—	—	19.1	mg/kg	19.10

[1]Radionuclides are not evaluated in the vegetation screen; instead, they evaluated for small mammals because small mammals are the limiting
[2]Sediment benchmark values are rounded to one significant figure. Val Hulzebos *et al.* (1993) are based on a 14-day test because it is more appropriate for chronic exposure.
[3]Background UCL_{95} is based on a 1-tailed test (Sullivan 1995).
[4]Sediment benchmark is based on polychlorinated biphenyls (PCBs).
[5]The EC50 values in Hulzebos *et al.* (1993) were extrapolated to EC20 values by dividing by a factor of 5 (ORNL 1994).
[6]Benchmark is based on 2-Methylphenol.
[7]Benchmark is based on di-N-butyl phthalate.
[8]Benchmark is based on 1,1,1-Trichloroethane.
[9]Benchmark is based on 1,1,1-Trichloroethane and Tetrachloroethene.
[10]Benchmark is based on o-Xylene.

PCOC - potential chemical of concern
UCL_{95} - 95% upper confidence limit of the true mean
TRV - toxicity reference value
NA -benchmark not available

EC20 - benchmark chemical concentration based on 20% reduction in plant growth
ORNL - Oak Ridge National Laboratory (1994)
NOEC - no observed effect concentration
LOAEC - lowest observed effect concentration

Attachment 2
Table 12
Surface Water Standards for Aquatic Life*

Analyte	Water Quality Standard[1]	Units	WQS Source
Americium-241	1,300	pCi/L	H&K 1995
Cesium-137	8,200	pCi/L	H&K 1995
Plutonium-239/240	100	pCi/L	H&K 1995
Strontium-89/90	270,000	pCi/L	H&K 1995
Tritium	190,000,000	pCi/L	H&K 1996
Uranium-233/234	4,300	pCi/L	H&K 1995
Uranium-235	4,300	pCi/L	H&K 1995
Uranium-238	4,400	pCi/L	H&K 1995
Antimony	30	µg/L	IRIS
Arsenic	50	µg/L	CWQS
Barium	4	µg/L	ORNL 1994
Lead[2]	27,274	µg/L	CWQS
Lithium	NA	NA	NA
Magnesium	NA	NA	NA
Manganese	50	µg/L	CWQS
Molybdenum	239	µg/L	ORNL 1994
Nickel[2]	11,041	µg/L	CWQS
Strontium	620	µg/L	ORNL 1994
Thallium[3]	15	µg/L	CWQS
Tin	74	µg/L	ORNL 1994
Vanadium	19	µg/L	ORNL 1994
Bis(2-ethylhexyl)phthalate	360	µg/L	IRIS
Di-N-butyl phthalate	3.0	µg/L	IRIS
Benzoic acid	41.6	µg/L	ORNL 1994
Pentachlorophenol[4]	5.7	µg/L	CWQS
1,1,1-Trichloroethane[5]	18,000	µg/L	IRIS
1,1-Dichloroethane	47	µg/L	ORNL 1994
1,1-Dichloroethene	196	µg/L	ORNL 1994
1,2-Dichloroethane[5]	20,000	µg/L	CWQS
1,2-Dichloroethene[5]	31.2	µg/L	CWQS
Acetone	11,200	µg/L	ORNL 1994
Chloroform	1,240	µg/L	CWQS
Methylene chloride	2,240	µg/L	ORNL 1994
Tetrachloroethene	840	µg/L	CWQS
Toluene	176	µg/L	ORNL 1994
Total xylenes	86.2	µg/L	ORNL 1994
Trichloroethene	21,900	µg/L	CWQS
Vinyl acetate	20.8	µg/L	ORNL 1994

*Sitewide Surface Water PCOC List
[1]All values based on Tier II, secondary chronic values calculated using EPA guidelines unless otherwise noted (EPA 1993).
[2]Calculated using the A-series pond's UCL_{95} for hardness of 51.762 ug/L.
[3]chronic LEC
[4]pH dependent standard, the value shown is for pH = 7.0
[5]Acute value

WQS - water quality standard
H&K 1995 - Higley and Kuperman (1995)
ORNL 1994 - Oak Ridge National Laboratory(1994)
CWQS - Colorado Water Quality Standards
IRIS - Integrated Risk Information System
NA - no standard available

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
A-1	Antimony	0.0135	NA	NA	NA	NA	not available	2	7.7	7.7	M	mg/kg
A-1	Chromium	0.0135	NA	NA	NA	NA	not available	81	9.8	81	M	mg/kg
A-1	Cobalt	0.0135	NA	NA	NA	NA	not available	—	6.9	6.9	M	mg/kg
A-1	Copper	0.0135	NA	NA	NA	NA	not available	34	11.9	34	M	mg/kg
A-1	Iron	0.0135	NA	NA	NA	NA	not available	30,000	10216	30000	M	mg/kg
A-1	Magnesium	0.0135	NA	NA	NA	NA	not available	EN	1800	1800	M	mg/kg
A-1	Manganese	0.0135	NA	NA	NA	NA	not available	460	275	460	M	mg/kg
A-1	Potassium	0.0135	NA	NA	NA	NA	not available	EN	1143	1143	M	mg/kg
A-1	Silver	0.0135	NA	NA	NA	NA	not available	1	2.7	2.7	M	mg/kg
A-1	Sodium	0.0135	NA	NA	NA	NA	not available	EN	401	401	M	mg/kg
A-1	Vanadium	0.0135	NA	NA	NA	NA	not available	—	21.6	21.6	M	mg/kg
A-1	Zinc	0.0135	NA	NA	NA	NA	not available	150	71.9	150	M	mg/kg
A-1	Aldrin	0.0135	2.61	K,S&C,93	1.50	AWQC	not available	8.2495	NA	8.24945063	P	µg/kg
A-1	Aroclor 1254	0.0135	5.93	H&S,94	0.014	AWQC	20000	270.0000	NA	270	P	µg/kg
A-1	Aroclor-1260	0.0135	7.02	H&S,95	0.014	AWQC	not available	1979.0730	NA	1979.07296	P	µg/kg
A-1	gamma-BHC (Lindane)	0.0135	3.66	H&S,96	0.080	AWQC	not available	4.9366	NA	4.93655245	P	µg/kg
A-1	Heptachlor	0.0135	4.23	H&S,97	0.0038	AWQC	not available	0.8712	NA	0.87119899	P	µg/kg
A-1	Americium-241	0.0135	NA	NA	NA	NA	not available	46,000	0.3	46000	R	pCi/g
A-1	Gross alpha	0.0135	NA	NA	NA	NA	not available	—	28.1	28.1	R	pCi/g
A-1	Gross beta	0.0135	NA	NA	NA	NA	not available	—	37.9	37.9	R	pCi/g
A-1	Plutonium-239/240	0.0135	NA	NA	NA	NA	not available	520,000	0.94	520000	R	pCi/g
A-1	Radium-226	0.0135	NA	NA	NA	NA	not available	380,000	1.0	380000	R	pCi/g
A-1	Radium-228	0.0135	NA	NA	NA	NA	not available	250,000	2.0	250000	R	pCi/g
A-1	Strontium-89/90	0.0135	NA	NA	NA	NA	not available	6,700	0.28	6700	R	pCi/g
A-1	Uranium-233/234	0.0135	NA	NA	NA	NA	not available	10,000	2.0	10000	R	pCi/g
A-1	Uranium-235	0.0135	NA	NA	NA	NA	not available	10,000	0.07	10000	R	pCi/g
A-1	Uranium-238	0.0135	NA	NA	NA	NA	not available	4,200	1.7	4200	R	pCi/g
A-1	1,2,4-Trichlorobenzene	0.0135	3.16	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
A-1	2-Methylnaphthalene	0.0135	3.93	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
A-1	Acenaphthene	0.0135	3.76	H&S, 94	74.00	S&M,94	140000	1890.0000	NA	1890	S	µg/kg
A-1	Anthracene	0.0135	4.42	H&S, 94	0.0028	CWQS	not available	0.9942	NA	0.9942413	S	µg/kg
A-1	Benzo(a)anthracene	0.0135	5.6	H&S, 94	0.0028	CWQS	1317000	17779.5000	NA	17779.5	S	µg/kg
A-1	Benzo(a)pyrene	0.0135	6	H&S, 94	0.0028	CWQS	1063000	14350.5000	NA	14350.5	S	µg/kg
A-1	Benzo(b)fluoranthene	0.0135	5.74	K,S&C,93	0.0028	CWQS	not available	20.7726	NA	20.772645	S	µg/kg

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
A-1	Benzo(ghi)perylene	0.0135	6.89	K,S&C,93	0.0028	CWQS	not available	293.4214	NA	293.42141	S	µg/kg
A-1	Benzo(k)fluoranthene	0.0135	6.64	K,S&C,93	0.0028	CWQS	not available	165.0030	NA	165.002985	S	µg/kg
A-1	Benzoic acid	0.0135	2.26	K,S&C,93	41.60	S&M,94	not available	102.1944	NA	102.1944	S	µg/kg
A-1	Bis(2-ethylhexyl)phthalate	0.0135	9.44	H&S, 94	360.00	IRIS	not available	13385551498.2	NA	1.3386E+10	S	µg/kg
A-1	Butyl benzyl phthalate	0.0135	2.18	K,S&C,93	3.00	IRIS	not available	6.1299	NA	6.12992306	S	µg/kg
A-1	Chrysene	0.0135	5.39	K,S&C,93	0.0028	CWQS	not available	9.2788	NA	9.2787997	S	µg/kg
A-1	Di-N-octyl phthalate	0.0135	9.04	H&S, 94	not available	not available	not available	—	NA	NA	S	µg/kg
A-1	Dibenzo(ah)anthracene	0.0135	6.22	K,S&C,93	0.0028	CWQS	not available	62.7324	NA	62.7323851	S	µg/kg
A-1	Dibenzofuran	0.0135	4.05	H&S, 94	NA	NA	not available	—	NA	NA	S	µg/kg
A-1	Fluoranthene	0.0135	5	H&S, 94	42.00	CWQS	1020000	13770.0000	NA	13770	S	µg/kg
A-1	Fluorene	0.0135	3.7	K,S&C,93	0.0028	CWQS	not available	0.1894	NA	0.18944877	S	µg/kg
A-1	Indeno(1,2,3-cd)pyrene	0.0135	7.49	K,S&C,93	0.0028	CWQS	not available	1168.1317	NA	1168.13167	S	µg/kg
A-1	Naphthalene	0.0135	3.24	H&S, 94	620.0000	AWQC	not available	14545.3929	NA	14545.3929	S	µg/kg
A-1	Phenanthrene	0.0135	4.46	H&S, 94	0.0028	CWQS	123000	1660.5000	NA	1660.5	S	µg/kg
A-1	Phenol	0.0135	1.43	K,S&C,93	2560.00	IRIS	not available	930.1944	NA	930.194428	S	µg/kg
A-1	Pyrene	0.0135	4.81	K,S&C,93	0.0028	CWQS	1311000	17698.5000	NA	17698.5	S	µg/kg
A-1	2-Butanone	0.0135	0.09	K,S&C,93	20800.00	S&M,94	not available	345.4595	NA	345.459471	V	µg/kg
A-1	4-Methyl-2-pentanone	0.0135	0.79	K,S&C,93	164.00	S&M,94	not available	13.6514	NA	13.6514133	V	µg/kg
A-1	Acetone	0.0135	-0.24	H&S, 94	11200.00	S&M,94	not available	87.0065	NA	87.0065185	V	µg/kg
A-1	Benzene	0.0135	2.06	H&S, 94	5300.00	IRIS	not available	8215.0392	NA	8215.03916	V	µg/kg
A-1	Methylene chloride	0.0135	1.28	H&S, 94	4.70	CWQS	not available	1.2090	NA	1.20901483	V	µg/kg
A-1	Toluene	0.0135	2.65	H&S, 94	17500.00	AWQC	not available	105.5290	NA	105.528999	V	µg/kg
A-2	Antimony	0.0259	NA	NA	NA	NA	not available	2	7.671500	7.6715	M	mg/kg
A-2	Chromium	0.0259	NA	NA	NA	NA	not available	81	9.751100	81	M	mg/kg
A-2	Cobalt	0.0259	NA	NA	NA	NA	not available	—	6.856400	6.8564	M	mg/kg
A-2	Copper	0.0259	NA	NA	NA	NA	not available	34	11.931600	34	M	mg/kg
A-2	Iron	0.0259	NA	NA	NA	NA	not available	30,000	10216.219900	30000	M	mg/kg
A-2	Magnesium	0.0259	NA	NA	NA	NA	not available	EN	1800.036700	1800.0367	M	mg/kg
A-2	Manganese	0.0259	NA	NA	NA	NA	not available	460	274.733200	460	M	mg/kg
A-2	Potassium	0.0259	NA	NA	NA	NA	not available	EN	1143.054800	1143.0548	M	mg/kg
A-2	Silver	0.0259	NA	NA	NA	NA	not available	1	2.742800	2.7428	M	mg/kg
A-2	Sodium	0.0259	NA	NA	NA	NA	not available	EN	401.397500	401.3975	M	mg/kg
A-2	Vanadium	0.0259	NA	NA	NA	NA	not available	—	21.598900	21.5989	M	mg/kg
A-2	Zinc	0.0259	NA	NA	NA	NA	not available	150	71.947800	150	M	mg/kg

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
A-2	Aldrin	0.0259	2.61	K,S&C,93	1.50	AWQC	not available	15.8267	NA	15.8267238	P	µg/kg
A-2	Aroclor-1254	0.0259	5.93	H&S,94	0.014	AWQC	20000	518.0000	NA	518	P	µg/kg
A-2	Aroclor-1260	0.0259	7.02	H&S,95	0.014	AWQC	not available	3796.8881	NA	3796.88812	P	µg/kg
A-2	gamma-BHC (Lindane)	0.0259	3.66	H&S,96	0.080	AWQC	not available	9.4709	NA	9.47086729	P	µg/kg
A-2	Heptachlor	0.0259	4.23	H&S,97	0.0038	AWQC	not available	1.6714	NA	1.6714114	P	µg/kg
A-2	Americium-241	0.0259	NA	NA	NA	NA	not available	46,000	0.307400	46000	R	pCi/g
A-2	Gross alpha	0.0259	NA	NA	NA	NA	not available	—	28.105000	28.105	R	pCi/g
A-2	Gross beta	0.0259	NA	NA	NA	NA	not available	—	37.909400	37.9094	R	pCi/g
A-2	Plutonium-239/240	0.0259	NA	NA	NA	NA	not available	520,000	0.940500	520000	R	pCi/g
A-2	Radium-226	0.0259	NA	NA	NA	NA	not available	380,000	0.985300	380000	R	pCi/g
A-2	Radium-228	0.0259	NA	NA	NA	NA	not available	250,000	1.988300	250000	R	pCi/g
A-2	Strontium-89/90	0.0259	NA	NA	NA	NA	not available	6,700	0.276600	6700	R	pCi/g
A-2	Uranium-233/234	0.0259	NA	NA	NA	NA	not available	10,000	1.955900	10000	R	pCi/g
A-2	Uranium-235	0.0259	NA	NA	NA	NA	not available	10,000	0.073500	10000	R	pCi/g
A-2	Uranium-238	0.0259	NA	NA	NA	NA	not available	4,200	1.689500	4200	R	pCi/g
A-2	1,2,4-Trichlorobenzene	0.0259	3.16	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
A-2	2-Methylnaphthalene	0.0259	3.93	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
A-2	Acenaphthene	0.0259	3.76	H&S, 94	74.00	S&M,94	140000	3626.0000	NA	3626	S	µg/kg
A-2	Anthracene	0.0259	4.42	H&S, 94	0.0028	CWQS	not available	1.9075	NA	1.90747035	S	µg/kg
A-2	Benzo(a)anthracene	0.0259	5.6	H&S, 94	0.0028	CWQS	1317000	34110.3000	NA	34110.3	S	µg/kg
A-2	Benzo(a)pyrene	0.0259	6	H&S, 94	0.0028	CWQS	1063000	27531.7000	NA	27531.7	S	µg/kg
A-2	Benzo(b)fluoranthene	0.0259	5.74	K,S&C,93	0.0028	CWQS	not available	39.8527	NA	39.8527042	S	µg/kg
A-2	Benzo(ghi)perylene	0.0259	6.89	K,S&C,93	0.0028	CWQS	not available	562.9344	NA	562.934409	S	µg/kg
A-2	Benzo(k)fluoranthene	0.0259	6.64	K,S&C,93	0.0028	CWQS	not available	316.5613	NA	316.561282	S	µg/kg
A-2	Benzoic acid	0.0259	2.26	K,S&C,93	41.60	S&M,94	not available	196.0618	NA	196.061849	S	µg/kg
A-2	Bis(2-ethylhexyl)phthalate	0.0259	9.44	H&S, 94	360.00	IRIS	not available	25680428429.9	NA	2.568E+10	S	µg/kg
A-2	Butyl benzyl phthalate	0.0259	2.18	K,S&C,93	3.00	IRIS	not available	11.7604	NA	11.7603709	S	µg/kg
A-2	Chrysene	0.0259	5.39	K,S&C,93	0.0028	CWQS	not available	17.8015	NA	17.8015491	S	µg/kg
A-2	Di-N-octyl phthalate	0.0259	9.04	H&S, 94	not available	not available	not available	—	NA	NA	S	µg/kg
A-2	Dibenzo(ah)anthracene	0.0259	6.22	K,S&C,93	0.00	CWQS	not available	120.3532	NA	120.353243	S	µg/kg
A-2	Dibenzofuran	0.0259	4.05	H&S, 94	NA	NA	not available	—	NA	NA	S	µg/kg
A-2	Fluoranthene	0.0259	5	H&S, 94	42.00	CWQS	1020000	26418.0000	NA	26418	S	µg/kg
A-2	Fluorene	0.0259	3.7	K,S&C,93	0.0028	CWQS	not available	0.3635	NA	0.36346098	S	µg/kg
A-2	Indeno(1,2,3-cd)pyrene	0.0259	7.49	K,S&C,93	0.0028	CWQS	not available	2241.0822	NA	2241.08225	S	µg/kg

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
A-2	Naphthalene	0.0259	3.24	H&S, 94	620	AWQC	not available	27905.6057	NA	27905.6057	S	µg/kg
A-2	Phenanthrene	0.0259	4.46	H&S, 94	0.0028	CWQS	123000	3185.7000	NA	3185.7	S	µg/kg
A-2	Phenol	0.0259	1.43	K,S&C,93	2560.00	IRIS	not available	1784.5952	NA	1784.59524	S	µg/kg
A-2	Pyrene	0.0259	4.81	K,S&C,93	0.0028	CWQS	1311000	33954.9000	NA	33954.9	S	µg/kg
A-2	2-Butanone	0.0259	0.09	K,S&C,93	20800.00	S&M,94	not available	662.7704	NA	662.770392	V	µg/kg
A-2	4-Methyl-2-pentanone	0.0259	0.79	K,S&C,93	164.00	S&M,94	not available	26.1905	NA	26.1904893	V	µg/kg
A-2	Acetone	0.0259	-0.24	H&S, 94	11200.00	S&M,94	not available	166.9236	NA	166.923617	V	µg/kg
A-2	Benzene	0.0259	2.06	H&S, 94	5300.00	IRIS	not available	15760.7048	NA	15760.7048	V	µg/kg
A-2	Methylene chloride	0.0259	1.28	H&S, 94	4.70	CWQS	not available	2.3195	NA	2.31951733	V	µg/kg
A-2	Toluene	0.0259	2.65	H&S, 94	17500.00	AWQC	not available	202459.3381	NA	202459.338	V	µg/kg
A-3	Antimony	0.01153	NA	NA	NA	NA	not available	2	7.671500	7.6715	M	mg/kg
A-3	Chromium	0.01153	NA	NA	NA	NA	not available	81	9.751100	81	M	mg/kg
A-3	Cobalt	0.01153	NA	NA	NA	NA	not available	—	6.856400	6.8564	M	mg/kg
A-3	Copper	0.01153	NA	NA	NA	NA	not available	34	11.931600	34	M	mg/kg
A-3	Iron	0.01153	NA	NA	NA	NA	not available	30,000	10216.219900	30000	M	mg/kg
A-3	Magnesium	0.01153	NA	NA	NA	NA	not available	EN	1800.036700	1800.0367	M	mg/kg
A-3	Manganese	0.01153	NA	NA	NA	NA	not available	460	274.733200	460	M	mg/kg
A-3	Potassium	0.01153	NA	NA	NA	NA	not available	EN	1143.054800	1143.0548	M	mg/kg
A-3	Silver	0.01153	NA	NA	NA	NA	not available	1	2.742800	2.7428	M	mg/kg
A-3	Sodium	0.01153	NA	NA	NA	NA	not available	EN	401.397500	401.3975	M	mg/kg
A-3	Vanadium	0.01153	NA	NA	NA	NA	not available	---	21.598900	21.5989	M	mg/kg
A-3	Zinc	0.01153	NA	NA	NA	NA	not available	150	71.947800	150	M	mg/kg
A-3	Aldrin	0.01153	2.61	K,S&C,93	1.50	AWQC	not available	7.0444	NA	7.04441976	P	µg/kg
A-3	Aroclor-1254	0.01153	5.93	H&S,94	0.014	AWQC	20000	230.5600	NA	230.56	P	µg/kg
A-3	Aroclor-1260	0.01153	7.02	H&S,95	0.014	AWQC	not available	1689.9817	NA	1689.98171	P	µg/kg
A-3	gamma-BHC (Lindane)	0.01153	3.66	H&S,96	0.080	AWQC	not available	4.2155	NA	4.21545012	P	µg/kg
A-3	Heptachlor	0.01153	4.23	H&S,97	0.0038	AWQC	not available	0.7439	NA	0.74393941	P	µg/kg
A-3	Americium-241	0.01153	NA	NA	NA	NA	not available	46,000	0.307400	46000	R	pCi/g
A-3	Gross alpha	0.01153	NA	NA	NA	NA	not available	—	28.105000	28.105	R	pCi/g
A-3	Gross beta	0.01153	NA	NA	NA	NA	not available	—	37.909400	37.9094	R	pCi/g
A-3	Plutonium-239/240	0.01153	NA	NA	NA	NA	not available	520,000	0.940500	520000	R	pCi/g
A-3	Radium-226	0.01153	NA	NA	NA	NA	not available	380,000	0.985300	380000	R	pCi/g
A-3	Radium-228	0.01153	NA	NA	NA	NA	not available	250,000	1.988300	250000	R	pCi/g
A-3	Strontium-89/90	0.01153	NA	NA	NA	NA	not available	6,700	0.276600	6700	R	pCi/g

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
A-3	Uranium-233/234	0.01153	NA	NA	NA	NA	not available	10,000	1.955900	10000	R	pCi/g
A-3	Uranium-235	0.01153	NA	NA	NA	NA	not available	10,000	0.073500	10000	R	pCi/g
A-3	Uranium-238	0.01153	NA	NA	NA	NA	not available	4,200	1.689500	4200	R	pCi/g
A-3	1,2,4-Trichlorobenzene	0.01153	3.16	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
A-3	2-Methylnaphthalene	0.01153	3.93	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
A-3	Acenaphthene	0.01153	3.76	H&S, 94	74.00	S&M,94	140000	1613.9200	NA	1613.92	S	µg/kg
A-3	Anthracene	0.01153	4.42	H&S, 94	0.0028	CWQS	not available	0.8490	NA	0.84900842	S	µg/kg
A-3	Benzo(a)anthracene	0.01153	5.6	H&S, 94	0.0028	CWQS	1317000	15182.3760	NA	15182.376	S	µg/kg
A-3	Benzo(a)pyrene	0.01153	6	H&S, 94	0.0028	CWQS	1063000	12254.2640	NA	12254.264	S	µg/kg
A-3	Benzo(b)fluoranthene	0.01153	5.74	K,S&C,93	0.0028	CWQS	not available	17.7383	NA	17.7383001	S	µg/kg
A-3	Benzo(ghi)perylene	0.01153	6.89	K,S&C,93	0.0028	CWQS	not available	250.5601	NA	250.560149	S	µg/kg
A-3	Benzo(k)fluoranthene	0.01153	6.64	K,S&C,93	0.0028	CWQS	not available	140.9003	NA	140.900326	S	µg/kg
A-3	Benzoic acid	0.01153	2.26	K,S&C,93	41.60	S&M,94	not available	87.2664	NA	87.2664478	S	µg/kg
A-3	Bis(2-ethylhexyl)phthalate	0.01153	9.44	H&S, 94	360.00	IRIS	not available	11430269457.1	NA	1.143E+10	S	µg/kg
A-3	Butyl benzyl phthalate	0.01153	2.18	K,S&C,93	3.00	IRIS	not available	5.2345	NA	5.23450022	S	µg/kg
A-3	Chrysene	0.01153	5.39	K,S&C,93	0.0028	CWQS	not available	7.9234	NA	7.92340763	S	µg/kg
A-3	Di-N-octyl phthalate	0.01153	9.04	H&S, 94	not available	not available	not available	—	NA	NA	S	µg/kg
A-3	Dibenzo(ah)anthracene	0.01153	6.22	K,S&C,93	0.0028	CWQS	not available	53.5688	NA	53.56881	S	µg/kg
A-3	Dibenzofuran	0.01153	4.05	H&S, 94	NA	NA	not available	—	NA	NA	S	µg/kg
A-3	Fluoranthene	0.01153	5	H&S, 94	42.00	CWQS	1020000	11758.5600	NA	11758.56	S	µg/kg
A-3	Fluorene	0.01153	3.7	K,S&C,93	0.0028	CWQS	not available	0.1618	NA	0.16177522	S	µg/kg
A-3	Indeno(1,2,3-cd)pyrene	0.01153	7.49	K,S&C,93	0.0028	CWQS	not available	997.4979	NA	997.497921	S	µg/kg
A-3	Naphthalene	0.01153	3.24	H&S, 94	620	AWQC	not available	12420.6881	NA	12420.6881	S	µg/kg
A-3	Phenanthrene	0.01153	4.46	H&S, 94	0.0028	CWQS	123000	1417.9440	NA	1417.944	S	µg/kg
A-3	Phenol	0.01153	1.43	K,S&C,93	2560.00	IRIS	not available	794.3171	NA	794.317138	S	µg/kg
A-3	Pyrene	0.01153	4.81	K,S&C,93	0.0028	CWQS	1311000	15113.2080	NA	15113.208	S	µg/kg
A-3	2-Butanone	0.01153	0.09	K,S&C,93	20800.00	S&M,94	not available	294.9968	NA	294.996799	V	µg/kg
A-3	4-Methyl-2-pentanone	0.01153	0.79	K,S&C,93	164.00	S&M,94	not available	11.6573	NA	11.6572958	V	µg/kg
A-3	Acetone	0.01153	-0.24	H&S, 94	11200.00	S&M,94	not available	74.2971	NA	74.2971219	V	µg/kg
A-3	Benzene	0.01153	2.06	H&S, 94	5300.00	IRIS	not available	7015.0349	NA	7015.03492	V	µg/kg
A-3	Methylene chloride	0.01153	1.28	H&S, 94	4.70	CWQS	not available	1.0324	NA	1.0324091	V	µg/kg
A-3	Toluene	0.01153	2.65	H&S, 94	17500.00	AWQC	not available	90113.9479	NA	90113.9479	V	µg/kg
A-4	Antimony	0.01119	NA	NA	NA	NA	not available	2	7.671500	7.6715	M	mg/kg
A-4	Chrom	0.01119	NA	NA	NA	[illegible]	not available	81	9.751100	81	M	mg/kg

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
A-4	Cobalt	0.01119	NA	NA	NA	NA	not available	—	6.856400	6.8564	M	mg/kg
A-4	Copper	0.01119	NA	NA	NA	NA	not available	34	11.931600	34	M	mg/kg
A-4	Iron	0.01119	NA	NA	NA	NA	not available	30,000	10216.219900	30000	M	mg/kg
A-4	Magnesium	0.01119	NA	NA	NA	NA	not available	EN	1800.036700	1800.0367	M	mg/kg
A-4	Manganese	0.01119	NA	NA	NA	NA	not available	460	274.733200	460	M	mg/kg
A-4	Potassium	0.01119	NA	NA	NA	NA	not available	EN	1143.054800	1143.0548	M	mg/kg
A-4	Silver	0.01119	NA	NA	NA	NA	not available	1	2.742800	2.7428	M	mg/kg
A-4	Sodium	0.01119	NA	NA	NA	NA	not available	EN	401.397500	401.3975	M	mg/kg
A-4	Vanadium	0.01119	NA	NA	NA	NA	not available	—	21.598900	21.5989	M	mg/kg
A-4	Zinc	0.01119	NA	NA	NA	NA	not available	150	71.947800	150	M	mg/kg
A-4	Aldrin	0.01119	2.61	K,S&C,93	1.50	AWQC	not available	6.8397	NA	6.83971117	P	µg/kg
A-4	Aroclor-1254	0.01119	5.93	H&S,94	0.014	AWQC	20000	223.8600	NA	223.86	P	µg/kg
A-4	Aroclor-1260	0.01119	7.02	H&S,95	0.014	AWQC	not available	1640.8714	NA	1640.87138	P	µg/kg
A-4	gamma-BHC (Lindane)	0.01119	3.66	H&S,96	0.080	AWQC	not available	4.0930	NA	4.09295049	P	µg/kg
A-4	Heptachlor	0.01119	4.23	H&S,97	0.0038	AWQC	not available	0.7223	NA	0.72232077	P	µg/kg
A-4	Americium-241	0.01119	NA	NA	NA	NA	not available	46,000	0.307400	46000	R	pCi/g
A-4	Gross alpha	0.01119	NA	NA	NA	NA	not available	—	28.105000	28.105	R	pCi/g
A-4	Gross beta	0.01119	NA	NA	NA	NA	not available	—	37.909400	37.9094	R	pCi/g
A-4	Plutonium-239/240	0.01119	NA	NA	NA	NA	not available	520,000	0.940500	520000	R	pCi/g
A-4	Radium-226	0.01119	NA	NA	NA	NA	not available	380,000	0.985300	380000	R	pCi/g
A-4	Radium-228	0.01119	NA	NA	NA	NA	not available	250,000	1.988300	250000	R	pCi/g
A-4	Strontium-89/90	0.01119	NA	NA	NA	NA	not available	6,700	0.276600	6700	R	pCi/g
A-4	Uranium-233/234	0.01119	NA	NA	NA	NA	not available	10,000	1.955900	10000	R	pCi/g
A-4	Uranium-235	0.01119	NA	NA	NA	NA	not available	10,000	0.073500	10000	R	pCi/g
A-4	Uranium-238	0.01119	NA	NA	NA	NA	not available	4,200	1.689500	4200	R	pCi/g
A-4	1,2,4-Trichlorobenzene	0.01119	3.16	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
A-4	2-Methylnaphthalene	0.01119	3.93	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
A-4	Acenaphthene	0.01119	3.76	H&S, 94	74.00	S&M,94	140000	1567.0200	NA	1567.02	S	µg/kg
A-4	Anthracene	0.01119	4.42	H&S, 94	0.0028	CWQS	not available	0.8243	NA	0.82433651	S	µg/kg
A-4	Benzo(a)anthracene	0.01119	5.6	H&S, 94	0.0028	CWQS	1317000	14741.1810	NA	14741.181	S	µg/kg
A-4	Benzo(a)pyrene	0.01119	6	H&S, 94	0.0028	CWQS	1063000	11898.1590	NA	11898.159	S	µg/kg
A-4	Benzo(b)fluoranthene	0.01119	5.74	K,S&C,93	0.0028	CWQS	not available	17.2228	NA	17.2228308	S	µg/kg
A-4	Benzo(ghi)perylene	0.01119	6.89	K,S&C,93	0.0028	CWQS	not available	243.2790	NA	243.278951	S	µg/kg
A-4	Benzo(k)fluoranthene	0.01119	6.64	K,S&C,93	0.0028	CWQS	not available	136.8058	NA	136.805808	S	µg/kg

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
A-4	Benzoic acid	0.01119	2.26	K,S&C,93	41.60	S&M,94	not available	84.7305	NA	84.7305127	S	µg/kg
A-4	Bis(2-ethylhexyl)phthalate	0.01119	9.44	H&S, 94	360.00	IRIS	not available	11098109475.5	NA	1.1098E+10	S	µg/kg
A-4	Butyl benzyl phthalate	0.01119	2.18	K,S&C,93	3.00	IRIS	not available	5.0824	NA	5.08238732	S	µg/kg
A-4	Chrysene	0.01119	5.39	K,S&C,93	0.0028	CWQS	not available	7.6932	NA	7.69315593	S	µg/kg
A-4	Di-N-octyl phthalate	0.01119	9.04	H&S, 94	not available	not available	not available	—	NA	NA	S	µg/kg
A-4	Dibenzo(ah)anthracene	0.01119	6.22	K,S&C,93	0.0028	CWQS	not available	52.0121	NA	52.0121175	S	µg/kg
A-4	Dibenzofuran	0.01119	4.05	H&S, 94	NA	NA	not available	—	NA	NA	S	µg/kg
A-4	Fluoranthene	0.01119	5	H&S, 94	42.00	CWQS	1020000	11416.8600	NA	11416.86	S	µg/kg
A-4	Fluorene	0.01119	3.7	K,S&C,93	0.0028	CWQS	not available	0.1571	NA	0.15707408	S	µg/kg
A-4	Indeno(1,2,3-cd)pyrene	0.01119	7.49	K,S&C,93	0.0028	CWQS	not available	968.5109	NA	968.51095	S	µg/kg
A-4	Naphthalene	0.01119	3.24	H&S, 94	620	AWQC	not available	12059.7469	NA	12059.7469	S	µg/kg
A-4	Phenanthrene	0.01119	4.46	H&S, 94	0.0028	CWQS	123000	1376.7390	NA	1376.739	S	µg/kg
A-4	Phenol	0.01119	1.43	K,S&C,93	2560.00	IRIS	not available	771.2345	NA	771.234536	S	µg/kg
A-4	Pyrene	0.01119	4.81	K,S&C,93	0.0028	CWQS	1311000	14674.0230	NA	14674.023	S	µg/kg
A-4	2-Butanone	0.01119	0.09	K,S&C,93	20800.00	S&M,94	not available	286.4243	NA	286.424286	V	µg/kg
A-4	4-Methyl-2-pentanone	0.01119	0.79	K,S&C,93	164.00	S&M,94	not available	11.3185	NA	11.3185385	V	µg/kg
A-4	Acetone	0.01119	-0.24	H&S, 94	11200.00	S&M,94	not available	72.1381	NA	72.1380712	V	µg/kg
A-4	Benzene	0.01119	2.06	H&S, 94	5300.00	IRIS	not available	6811.1802	NA	6811.18025	V	µg/kg
A-4	Methylene chloride	0.01119	1.28	H&S, 94	4.70	CWQS	not available	1.0024	NA	1.00240763	V	µg/kg
A-4	Toluene	0.01119	2.65	H&S, 94	17500.00	AWQC	not available	87495.2653	NA	87495.2653	V	µg/kg
A-5	Antimony	0.00862	NA	NA	NA	NA	not available	2	7.671500	7.6715	M	mg/kg
A-5	Chromium	0.00862	NA	NA	NA	NA	not available	81	9.751100	81	M	mg/kg
A-5	Cobalt	0.00862	NA	NA	NA	NA	not available	—	6.856400	6.8564	M	mg/kg
A-5	Copper	0.00862	NA	NA	NA	NA	not available	34	11.931600	34	M	mg/kg
A-5	Iron	0.00862	NA	NA	NA	NA	not available	30,000	10216.219900	30000	M	mg/kg
A-5	Magnesium	0.00862	NA	NA	NA	NA	not available	EN	1800.036700	1800.0367	M	mg/kg
A-5	Manganese	0.00862	NA	NA	NA	NA	not available	460	274.733200	460	M	mg/kg
A-5	Potassium	0.00862	NA	NA	NA	NA	not available	EN	1143.054800	1143.0548	M	mg/kg
A-5	Silver	0.00862	NA	NA	NA	NA	not available	1	2.742800	2.7428	M	mg/kg
A-5	Sodium	0.00862	NA	NA	NA	NA	not available	EN	401.397500	401.3975	M	mg/kg
A-5	Vanadium	0.00862	NA	NA	NA	NA	not available	—	21.598900	21.5989	M	mg/kg
A-5	Zinc	0.00862	NA	NA	NA	NA	not available	150	71.947800	150	M	mg/kg
A-5	Aldrin	0.00862	2.61	K,S&C,93	1.50	AWQC	not available	5.2674	NA	5.26742699	P	µg/kg
A-5	Aroclor-1254	0.00862	5.93	H&S,94	0.014	AWQC	20000	172.4000	NA	172.4	P	µg/kg

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
A-5	Aroclor-1260	0.00862	7.02	H&S,95	0.014	AWQC	not available	1263.6747	NA	1263.67473	P	µg/kg
A-5	gamma-BHC (Lindane)	0.00862	3.66	H&S,96	0.080	AWQC	not available	3.1521	NA	3.15208016	P	µg/kg
A-5	Heptachlor	0.00862	4.23	H&S,97	0.0038	AWQC	not available	0.5563	NA	0.55627669	P	µg/kg
A-5	Americium-241	0.00862	NA	NA	NA	NA	not available	46,000	0.307400	46000	R	pCi/g
A-5	Gross alpha	0.00862	NA	NA	NA	NA	not available	—	28.105000	28.105	R	pCi/g
A-5	Gross beta	0.00862	NA	NA	NA	NA	not available	—	37.909400	37.9094	R	pCi/g
A-5	Plutonium-239/240	0.00862	NA	NA	NA	NA	not available	520,000	0.940500	520000	R	pCi/g
A-5	Radium-226	0.00862	NA	NA	NA	NA	not available	380,000	0.985300	380000	R	pCi/g
A-5	Radium-228	0.00862	NA	NA	NA	NA	not available	250,000	1.988300	250000	R	pCi/g
A-5	Strontium-89/90	0.00862	NA	NA	NA	NA	not available	6,700	0.276600	6700	R	pCi/g
A-5	Uranium-233/234	0.00862	NA	NA	NA	NA	not available	10,000	1.955900	10000	R	pCi/g
A-5	Uranium-235	0.00862	NA	NA	NA	NA	not available	10,000	0.073500	10000	R	pCi/g
A-5	Uranium-238	0.00862	NA	NA	NA	NA	not available	4,200	1.689500	4200	R	pCi/g
A-5	1,2,4-Trichlorobenzene	0.00862	3.16	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
A-5	2-Methylnaphthalene	0.00862	3.93	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
A-5	Acenaphthene	0.00862	3.76	H&S, 94	74.00	S&M,94	140000	1206.8000	NA	1206.8	S	µg/kg
A-5	Anthracene	0.00862	4.42	H&S, 94	0.0028	CWQS	not available	0.6348	NA	0.63484148	S	µg/kg
A-5	Benzo(a)anthracene	0.00862	5.6	H&S, 94	0.0028	CWQS	1317000	11352.5400	NA	11352.54	S	µg/kg
A-5	Benzo(a)pyrene	0.00862	6	H&S, 94	0.0028	CWQS	1063000	9163.0600	NA	9163.06	S	µg/kg
A-5	Benzo(b)fluoranthene	0.00862	5.74	K,S&C,93	0.0028	CWQS	not available	13.2637	NA	13.2637185	S	µg/kg
A-5	Benzo(ghi)perylene	0.00862	6.89	K,S&C,93	0.0028	CWQS	not available	187.3550	NA	187.355004	S	µg/kg
A-5	Benzo(k)fluoranthene	0.00862	6.64	K,S&C,93	0.0028	CWQS	not available	105.3575	NA	105.357461	S	µg/kg
A-5	Benzoic acid	0.00862	2.26	K,S&C,93	41.60	S&M,94	not available	65.2530	NA	65.253017	S	µg/kg
A-5	Bis(2-ethylhexyl)phthalate	0.00862	9.44	H&S, 94	360.00	IRIS	not available	8546922512.2	NA	8546922512	S	µg/kg
A-5	Butyl benzyl phthalate	0.00862	2.18	K,S&C,93	3.00	IRIS	not available	3.9141	NA	3.91406939	S	µg/kg
A-5	Chrysene	0.00862	5.39	K,S&C,93	0.0028	CWQS	not available	5.9247	NA	5.92468544	S	µg/kg
A-5	Di-N-octyl phthalate	0.00862	9.04	H&S, 94	not available	not available	not available	—	NA	NA	S	µg/kg
A-5	Dibenzo(ah)anthracene	0.00862	6.22	K,S&C,93	0.00	CWQS	not available	40.0558	NA	40.0557896	S	µg/kg
A-5	Dibenzofuran	0.00862	4.05	H&S, 94	NA	NA	not available	—	NA	NA	S	µg/kg
A-5	Fluoranthene	0.00862	5	H&S, 94	42.00	CWQS	1020000	8792.4000	NA	8792.4	S	µg/kg
A-5	Fluorene	0.00862	3.7	K,S&C,93	0.0028	CWQS	not available	0.1210	NA	0.12096655	S	µg/kg
A-5	Indeno(1,2,3-cd)pyrene	0.00862	7.49	K,S&C,93	0.0028	CWQS	not available	745.8737	NA	745.873706	S	µg/kg
A-5	Naphthalene	0.00862	3.24	H&S, 94	620	AWQC	not available	9287.5027	NA	9287.50275	S	µg/kg

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
A-5	Phenanthrene	0.00862	4.46	H&S, 94	0.0028	CWQS	123000	1060.2600	NA	1060.26	S	µg/kg
A-5	Phenol	0.00862	1.43	K,S&C,93	2560.00	IRIS	not available	593.9464	NA	593.946368	S	µg/kg
A-5	Pyrene	0.00862	4.81	K,S&C,93	0.00	CWQS	1311000	11300.8200	NA	11300.82	S	µg/kg
A-5	2-Butanone	0.00862	0.09	K,S&C,93	20800.00	S&M,94	not available	220.5823	NA	220.58227	V	µg/kg
A-5	4-Methyl-2-pentanone	0.00862	0.79	K,S&C,93	164.00	S&M,94	not available	8.7167	NA	8.71668022	V	µg/kg
A-5	Acetone	0.00862	-0.24	H&S, 94	11200.00	S&M,94	not available	55.5553	NA	55.5552733	V	µg/kg
A-5	Benzene	0.00862	2.06	H&S, 94	5300.00	IRIS	not available	5245.4546	NA	5245.45464	V	µg/kg
A-5	Methylene chloride	0.00862	1.28	H&S, 94	4.70	CWQS	not available	0.7720	NA	0.77197836	V	µg/kg
A-5	Toluene	0.00862	2.65	H&S, 94	17500.00	AWQC	not available	67382.2199	NA	67382.2199	V	µg/kg
B-1	Antimony	0.023	NA	NA	NA	NA	not available	2	7.671500	7.6715	M	mg/kg
B-1	Chromium	0.023	NA	NA	NA	NA	not available	81	9.751100	81	M	mg/kg
B-1	Cobalt	0.023	NA	NA	NA	NA	not available	—	6.856400	6.8564	M	mg/kg
B-1	Copper	0.023	NA	NA	NA	NA	not available	34	11.931600	34	M	mg/kg
B-1	Iron	0.023	NA	NA	NA	NA	not available	30,000	10216.219900	30000	M	mg/kg
B-1	Magnesium	0.023	NA	NA	NA	NA	not available	EN	1800.036700	1800.0367	M	mg/kg
B-1	Manganese	0.023	NA	NA	NA	NA	not available	460	274.733200	460	M	mg/kg
B-1	Potassium	0.023	NA	NA	NA	NA	not available	EN	1143.054800	1143.0548	M	mg/kg
B-1	Silver	0.023	NA	NA	NA	NA	not available	1	2.742800	2.7428	M	mg/kg
B-1	Sodium	0.023	NA	NA	NA	NA	not available	EN	401.397500	401.3975	M	mg/kg
B-1	Vanadium	0.023	NA	NA	NA	NA	not available	—	21.598900	21.5989	M	mg/kg
B-1	Zinc	0.023	NA	NA	NA	NA	not available	150	71.947800	150	M	mg/kg
B-1	Aldrin	0.023	2.61	K,S&C,93	1.50	AWQC	not available	14.0546	NA	14.0546196	P	µg/kg
B-1	Aroclor-1254	0.023	5.93	H&S,94	0.014	AWQC	20000	460.0000	NA	460	P	µg/kg
B-1	Aroclor-1260	0.023	7.02	H&S,95	0.014	AWQC	not available	3371.7539	NA	3371.75392	P	µg/kg
B-1	gamma-BHC (Lindane)	0.023	3.66	H&S,96	0.080	AWQC	not available	8.4104	NA	8.41042269	P	µg/kg
B-1	Heptachlor	0.023	4.23	H&S,97	0.0038	AWQC	not available	1.4843	NA	1.48426495	P	µg/kg
B-1	Americium-241	0.023	NA	NA	NA	NA	not available	46,000	0.307400	46000	R	pCi/g
B-1	Gross alpha	0.023	NA	NA	NA	NA	not available	—	28.105000	28.105	R	pCi/g
B-1	Gross beta	0.023	NA	NA	NA	NA	not available	—	37.909400	37.9094	R	pCi/g
B-1	Plutonium-239/240	0.023	NA	NA	NA	NA	not available	520,000	0.940500	520000	R	pCi/g
B-1	Radium-226	0.023	NA	NA	NA	NA	not available	380,000	0.985300	380000	R	pCi/g
B-1	Radium-228	0.023	NA	NA	NA	NA	not available	250,000	1.988300	250000	R	pCi/g
B-1	Strontium-89/90	0.023	NA	NA	NA	NA	not available	6,700	0.276600	6700	R	pCi/g
B-1	Uran[illegible]233/234	0.023	NA	NA	NA	[illegible]A	not available	10,000	1.955900	10000[illegible]	R	pCi/g

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
B-1	Uranium-235	0.023	NA	NA	NA	NA	not available	10,000	0.073500	10000	R	pCi/g
B-1	Uranium-238	0.023	NA	NA	NA	NA	not available	4,200	1.689500	4200	R	pCi/g
B-1	1,2,4-Trichlorobenzene	0.023	3.16	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
B-1	2-Methylnaphthalene	0.023	3.93	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
B-1	Acenaphthene	0.023	3.76	H&S, 94	74.00	S&M,94	140000	3220.0000	NA	3220	S	µg/kg
B-1	Anthracene	0.023	4.42	H&S, 94	0.0028	CWQS	not available	1.6939	NA	1.69389259	S	µg/kg
B-1	Benzo(a)anthracene	0.023	5.6	H&S, 94	0.0028	CWQS	1317000	30291.0000	NA	30291	S	µg/kg
B-1	Benzo(a)pyrene	0.023	6	H&S, 94	0.0028	CWQS	1063000	24449.0000	NA	24449	S	µg/kg
B-1	Benzo(b)fluoranthene	0.023	5.74	K,S&C,93	0.0028	CWQS	not available	35.3904	NA	35.3904323	S	µg/kg
B-1	Benzo(ghi)perylene	0.023	6.89	K,S&C,93	0.0028	CWQS	not available	499.9031	NA	499.903143	S	µg/kg
B-1	Benzo(k)fluoranthene	0.023	6.64	K,S&C,93	0.0028	CWQS	not available	281.1162	NA	281.116196	S	µg/kg
B-1	Benzoic acid	0.023	2.26	K,S&C,93	41.60	S&M,94	not available	174.1090	NA	174.108978	S	µg/kg
B-1	Bis(2-ethylhexyl)phthalate	0.023	9.44	H&S, 94	360.00	IRIS	not available	22805013663.6	NA	2.2805E+10	S	µg/kg
B-1	Butyl benzyl phthalate	0.023	2.18	K,S&C,93	3.00	IRIS	not available	10.4436	NA	10.4435726	S	µg/kg
B-1	Chrysene	0.023	5.39	K,S&C,93	0.0028	CWQS	not available	15.8083	NA	15.8083254	S	µg/kg
B-1	Di-N-octyl phthalate	0.023	9.04	H&S, 94	not available	not available	not available	—	NA	NA	S	µg/kg
B-1	Dibenzo(ah)anthracene	0.023	6.22	K,S&C,93	0.00	CWQS	not available	106.8774	NA	106.877397	S	µg/kg
B-1	Dibenzofuran	0.023	4.05	H&S, 94	NA	NA	not available	—	NA	NA	S	µg/kg
B-1	Fluoranthene	0.023	5	H&S, 94	42.00	CWQS	1020000	23460.0000	NA	23460	S	µg/kg
B-1	Fluorene	0.023	3.7	K,S&C,93	0.0028	CWQS	not available	0.3228	NA	0.32276458	S	µg/kg
B-1	Indeno(1,2,3-cd)pyrene	0.023	7.49	K,S&C,93	0.0028	CWQS	not available	1990.1503	NA	1990.15026	S	µg/kg
B-1	Naphthalene	0.023	3.24	H&S, 94	620	AWQC	not available	24781.0398	NA	24781.0398	S	µg/kg
B-1	Phenanthrene	0.023	4.46	H&S, 94	0.0028	CWQS	123000	2829.0000	NA	2829	S	µg/kg
B-1	Phenol	0.023	1.43	K,S&C,93	2560.00	IRIS	not available	1584.7757	NA	1584.77569	S	µg/kg
B-1	Pyrene	0.023	4.81	K,S&C,93	0.0028	CWQS	1311000	30153.0000	NA	30153	S	µg/kg
B-1	2-Butanone	0.023	0.09	K,S&C,93	20800.00	S&M,94	not available	588.5606	NA	588.56058	V	µg/kg
B-1	4-Methyl-2-pentanone	0.023	0.79	K,S&C,93	164.00	S&M,94	not available	23.2580	NA	23.2579635	V	µg/kg
B-1	Acetone	0.023	-0.24	H&S, 94	11200.00	S&M,94	not available	148.2333	NA	148.233328	V	µg/kg
B-1	Benzene	0.023	2.06	H&S, 94	5300.00	IRIS	not available	13995.9926	NA	13995.9926	V	µg/kg
B-1	Methylene chloride	0.023	1.28	H&S, 94	4.70	CWQS	not available	2.0598	NA	2.05980304	V	µg/kg
B-1	Toluene	0.023	2.65	H&S, 94	17500.00	AWQC	not available	179790.1458	NA	179790.146	V	µg/kg
B-2	Antimony	0.03786	NA	NA	NA	NA	not available	2	7.671500	7.6715	M	mg/kg
B-2	Chromium	0.03786	NA	NA	NA	NA	not available	81	9.751100	81	M	mg/kg
B-2	Cobalt	0.03786	NA	NA	NA	NA	not available	—	6.856400	6.8564	M	mg/kg

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
B-2	Copper	0.03786	NA	NA	NA	NA	not available	34	11.931600	34	M	mg/kg
B-2	Iron	0.03786	NA	NA	NA	NA	not available	30,000	10216.219900	30000	M	mg/kg
B-2	Magnesium	0.03786	NA	NA	NA	NA	not available	EN	1800.036700	1800.0367	M	mg/kg
B-2	Manganese	0.03786	NA	NA	NA	NA	not available	460	274.733200	460	M	mg/kg
B-2	Potassium	0.03786	NA	NA	NA	NA	not available	EN	1143.054800	1143.0548	M	mg/kg
B-2	Silver	0.03786	NA	NA	NA	NA	not available	1	2.742800	2.7428	M	mg/kg
B-2	Sodium	0.03786	NA	NA	NA	NA	not available	EN	401.397500	401.3975	M	mg/kg
B-2	Vanadium	0.03786	NA	NA	NA	NA	not available	—	21.598900	21.5989	M	mg/kg
B-2	Zinc	0.03786	NA	NA	NA	NA	not available	150	71.947800	150	M	mg/kg
B-2	Aldrin	0.03786	2.61	K,S&C,93	1.50	AWQC	not available	23.1351	NA	23.135126	P	µg/kg
B-2	Aroclor-1254	0.03786	5.93	H&S,94	0.014	AWQC	20000	757.2000	NA	757.2	P	µg/kg
B-2	Aroclor-1260	0.03786	7.02	H&S,95	0.014	AWQC	not available	5550.2002	NA	5550.20016	P	µg/kg
B-2	gamma-BHC (Lindane)	0.03786	3.66	H&S,96	0.080	AWQC	not available	13.8443	NA	13.8442871	P	µg/kg
B-2	Heptachlor	0.03786	4.23	H&S,97	0.0038	AWQC	not available	2.4432	NA	2.44322918	P	µg/kg
B-2	Americium-241	0.03786	NA	NA	NA	NA	not available	46,000	0.307400	46000	R	pCi/g
B-2	Gross alpha	0.03786	NA	NA	NA	NA	not available	—	28.105000	28.105	R	pCi/g
B-2	Gross beta	0.03786	NA	NA	NA	NA	not available	—	37.909400	37.9094	R	pCi/g
B-2	Plutonium-239/240	0.03786	NA	NA	NA	NA	not available	520,000	0.940500	520000	R	pCi/g
B-2	Radium-226	0.03786	NA	NA	NA	NA	not available	380,000	0.985300	380000	R	pCi/g
B-2	Radium-228	0.03786	NA	NA	NA	NA	not available	250,000	1.988300	250000	R	pCi/g
B-2	Strontium-89/90	0.03786	NA	NA	NA	NA	not available	6,700	0.276600	6700	R	pCi/g
B-2	Uranium-233/234	0.03786	NA	NA	NA	NA	not available	10,000	1.955900	10000	R	pCi/g
B-2	Uranium-235	0.03786	NA	NA	NA	NA	not available	10,000	0.073500	10000	R	pCi/g
B-2	Uranium-238	0.03786	NA	NA	NA	NA	not available	4,200	1.689500	4200	R	pCi/g
B-2	1,2,4-Trichlorobenzene	0.03786	3.16	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
B-2	2-Methylnaphthalene	0.03786	3.93	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
B-2	Acenaphthene	0.03786	3.76	H&S, 94	74.00	S&M,94	140000	5300.4000	NA	5300.4	S	µg/kg
B-2	Anthracene	0.03786	4.42	H&S, 94	0.0028	CWQS	not available	2.7883	NA	2.78829449	S	µg/kg
B-2	Benzo(a)anthracene	0.03786	5.6	H&S, 94	0.0028	CWQS	1317000	49861.6200	NA	49861.62	S	µg/kg
B-2	Benzo(a)pyrene	0.03786	6	H&S, 94	0.0028	CWQS	1063000	40245.1800	NA	40245.18	S	µg/kg
B-2	Benzo(b)fluoranthene	0.03786	5.74	K,S&C,93	0.0028	CWQS	not available	58.2557	NA	58.255729	S	µg/kg
B-2	Benzo(ghi)perylene	0.03786	6.89	K,S&C,93	0.0028	CWQS	not available	822.8840	NA	822.884043	S	µg/kg
B-2	Benzo(k)fluoranthene	0.03786	6.64	K,S&C,93	0.0028	CWQS	not available	462.7417	NA	462.741703	S	µg/kg
B-2	Benzoic acid	0.03786	2.26	K,S&C,93	41.60	S&M,94	not available	286.599	NA	286.598518	S	µg/kg

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
B-2	Bis(2-ethylhexyl)phthalate	0.03786	9.44	H&S, 94	360.00	IRIS	not available	37539035535	NA	3.7539E+10	S	µg/kg
B-2	Butyl benzyl phthalate	0.03786	2.18	K,S&C,93	3.00	IRIS	not available	17.1910	NA	17.1910287	S	µg/kg
B-2	Chrysene	0.03786	5.39	K,S&C,93	0.0028	CWQS	not available	26.0219	NA	26.0218783	S	µg/kg
B-2	Di-N-octyl phthalate	0.03786	9.04	H&S, 94	not available	not available	not available	—	NA	NA	S	µg/kg
B-2	Dibenzo(ah)anthracene	0.03786	6.22	K,S&C,93	0.0028	CWQS	not available	175.9295	NA	175.929489	S	µg/kg
B-2	Dibenzofuran	0.03786	4.05	H&S, 94	NA	NA	not available	—	NA	NA	S	µg/kg
B-2	Fluoranthene	0.03786	5	H&S, 94	42.0	CWQS	1020000	38617.2000	NA	38617.2	S	µg/kg
B-2	Fluorene	0.03786	3.7	K,S&C,93	0.0028	CWQS	not available	0.5313	NA	0.53129856	S	µg/kg
B-2	Indeno(1,2,3-cd)pyrene	0.03786	7.49	K,S&C,93	0.0028	CWQS	not available	3275.9604	NA	3275.96038	S	µg/kg
B-2	Naphthalene	0.03786	3.24	H&S, 94	620	AWQC	not available	40791.7464	NA	40791.7464	S	µg/kg
B-2	Phenanthrene	0.03786	4.46	H&S, 94	0.0028	CWQS	123000	4656.7800	NA	4656.78	S	µg/kg
B-2	Phenol	0.03786	1.43	K,S&C,93	2560.00	IRIS	not available	2608.6786	NA	2608.6786	S	µg/kg
B-2	Pyrene	0.03786	4.81	K,S&C,93	0.0028	CWQS	1311000	49634.4600	NA	49634.46	S	µg/kg
B-2	2-Butanone	0.03786	0.09	K,S&C,93	20800.00	S&M,94	not available	968.8219	NA	968.821894	V	µg/kg
B-2	4-Methyl-2-pentanone	0.03786	0.79	K,S&C,93	164.00	S&M,94	not available	38.2846	NA	38.2846303	V	µg/kg
B-2	Acetone	0.03786	-0.24	H&S, 94	11200.00	S&M,94	not available	244.0049	NA	244.004948	V	µg/kg
B-2	Benzene	0.03786	2.06	H&S, 94	5300.00	IRIS	not available	23038.6209	NA	23038.6209	V	µg/kg
B-2	Methylene chloride	0.03786	1.28	H&S, 94	4.70	CWQS	not available	3.3906	NA	3.39061491	V	µg/kg
B-2	Toluene	0.03786	2.65	H&S, 94	17500.00	AWQC	not available	295950.2140	NA	295950.214	V	µg/kg
B-3	Antimony	0.01805	NA	NA	NA	NA	not available	2	7.671500	7.6715	M	mg/kg
B-3	Chromium	0.01805	NA	NA	NA	NA	not available	81	9.751100	81	M	mg/kg
B-3	Cobalt	0.01805	NA	NA	NA	NA	not available	—	6.856400	6.8564	M	mg/kg
B-3	Copper	0.01805	NA	NA	NA	NA	not available	34	11.931600	34	M	mg/kg
B-3	Iron	0.01805	NA	NA	NA	NA	not available	30,000	10216.21990	30000.0	M	mg/kg
B-3	Magnesium	0.01805	NA	NA	NA	NA	not available	EN	1800.03670	1800.0367	M	mg/kg
B-3	Manganese	0.01805	NA	NA	NA	NA	not available	460	274.733200	460	M	mg/kg
B-3	Potassium	0.01805	NA	NA	NA	NA	not available	EN	1143.054800	1143.0548	M	mg/kg
B-3	Silver	0.01805	NA	NA	NA	NA	not available	1	2.742800	2.7428	M	mg/kg
B-3	Sodium	0.01805	NA	NA	NA	NA	not available	EN	401.397500	401.3975	M	mg/kg
B-3	Vanadium	0.01805	NA	NA	NA	NA	not available	—	21.598900	21.5989	M	mg/kg
B-3	Zinc	0.01805	NA	NA	NA	NA	not available	150	71.947800	150	M	mg/kg
B-3	Aldrin	0.01805	2.61	K,S&C,93	1.50	AWQC	not available	11.0317	NA	11.0316542	P	µg/kg
B-3	Aroclor-1254	0.01805	5.93	H&S,94	0.014	AWQC	20000	361.0600	NA	361.06	P	µg/kg
B-3	Aroclor-1260	0.01805	7.02	H&S,95	0.014	AWQC	not available	2646.5336	NA	2646.53363	P	µg/kg

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
B-3	gamma-BHC (Lindane)	0.01805	3.66	H&S,96	0.080	AWQC	not available	6.6015	NA	6.60145047	P	µg/kg
B-3	Heptachlor	0.01805	4.23	H&S,97	0.0038	AWQC	not available	1.1650	NA	1.16501892	P	µg/kg
B-3	Americium-241	0.01805	NA	NA	NA	NA	not available	46,000	0.307400	46000	R	pCi/g
B-3	Gross alpha	0.01805	NA	NA	NA	NA	not available	—	28.105000	28.105	R	pCi/g
B-3	Gross beta	0.01805	NA	NA	NA	NA	not available	—	37.909400	37.9094	R	pCi/g
B-3	Plutonium-239/240	0.01805	NA	NA	NA	NA	not available	520,000	0.940500	520000	R	pCi/g
B-3	Radium-226	0.01805	NA	NA	NA	NA	not available	380,000	0.985300	380000	R	pCi/g
B-3	Radium-228	0.01805	NA	NA	NA	NA	not available	250,000	1.988300	250000	R	pCi/g
B-3	Strontium-89/90	0.01805	NA	NA	NA	NA	not available	6,700	0.276600	6700	R	pCi/g
B-3	Uranium-233/234	0.01805	NA	NA	NA	NA	not available	10,000	1.955900	10000	R	pCi/g
B-3	Uranium-235	0.01805	NA	NA	NA	NA	not available	10,000	0.073500	10000	R	pCi/g
B-3	Uranium-238	0.01805	NA	NA	NA	NA	not available	4,200	1.689500	4200	R	pCi/g
B-3	1,2,4-Trichlorobenzene	0.01805	3.16	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
B-3	2-Methylnaphthalene	0.01805	3.93	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
B-3	Acenaphthene	0.01805	3.76	H&S, 94	74.00	S&M,94	140000	2527.4200	NA	2527.42	S	µg/kg
B-3	Anthracene	0.01805	4.42	H&S, 94	0.0028	CWQS	not available	1.3296	NA	1.32955839	S	µg/kg
B-3	Benzo(a)anthracene	0.01805	5.6	H&S, 94	0.0028	CWQS	1317000	23775.8010	NA	23775.801	S	µg/kg
B-3	Benzo(a)pyrene	0.01805	6	H&S, 94	0.0028	CWQS	1063000	19190.3390	NA	19190.339	S	µg/kg
B-3	Benzo(b)fluoranthene	0.01805	5.74	K,S&C,93	0.0028	CWQS	not available	27.7784	NA	27.7784119	S	µg/kg
B-3	Benzo(ghi)perylene	0.01805	6.89	K,S&C,93	0.0028	CWQS	not available	392.3805	NA	392.380498	S	µg/kg
B-3	Benzo(k)fluoranthene	0.01805	6.64	K,S&C,93	0.0028	CWQS	not available	220.6518	NA	220.651769	S	µg/kg
B-3	Benzoic acid	0.01805	2.26	K,S&C,93	41.60	S&M,94	not available	136.6604	NA	136.660408	S	µg/kg
B-3	Bis(2-ethylhexyl)phthalate	0.01805	9.44	H&S, 94	360.00	IRIS	not available	17899952681.3	NA	1.79E+10	S	µg/kg
B-3	Butyl benzyl phthalate	0.01805	2.18	K,S&C,93	3.00	IRIS	not available	8.1973	NA	8.19729637	S	µg/kg
B-3	Chrysene	0.01805	5.39	K,S&C,93	0.0028	CWQS	not available	12.4082	NA	12.4081608	S	µg/kg
B-3	Di-N-octyl phthalate	0.01805	9.04	H&S, 94	not available	not available	not available	—	NA	NA	S	µg/kg
B-3	Dibenzo(ah)anthracene	0.01805	6.22	K,S&C,93	0.0028	CWQS	not available	83.8895	NA	83.8894628	S	µg/kg
B-3	Dibenzofuran	0.01805	4.05	H&S, 94	NA	NA	not available	—	NA	NA	S	µg/kg
B-3	Fluoranthene	0.01805	5	H&S, 94	42.00	CWQS	1020000	18414.0600	NA	18414.06	S	µg/kg
B-3	Fluorene	0.01805	3.7	K,S&C,93	0.0028	CWQS	not available	0.2533	NA	0.25334213	S	µg/kg
B-3	Indeno(1,2,3-cd)pyrene	0.01805	7.49	K,S&C,93	0.0028	CWQS	not available	1562.0949	NA	1562.0949	S	µg/kg
B-3	Naphthalene	0.01805	3.24	H&S, 94	620	AWQC	not available	19450.9614	NA	19450.9614	S	µg/kg
B-3	Phenanthrene	0.01805	4.46	H&S, 94	0.0028	CWQS	123000	2220.5190	NA	2220.519	S	µg/kg
B-3	Phenol	0.01805	1.43	K,S&C,93	2560.00	IRIS	not available	1243.9111	NA	1243.9111	S	µg/kg

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
B-3	Pyrene	0.01805	4.81	K,S&C,93	0.0028	CWQS	1311000	23667.4830	NA	23667.483	S	µg/kg
B-3	2-Butanone	0.01805	0.09	K,S&C,93	20800.00	S&M,94	not available	461.9689	NA	461.968876	V	µg/kg
B-3	4-Methyl-2-pentanone	0.01805	0.79	K,S&C,93	164.00	S&M,94	not available	18.2555	NA	18.2554789	V	µg/kg
B-3	Acetone	0.01805	-0.24	H&S, 94	11200.00	S&M,94	not available	116.3503	NA	116.350273	V	µg/kg
B-3	Benzene	0.01805	2.06	H&S, 94	5300.00	IRIS	not available	10985.6372	NA	10985.6372	V	µg/kg
B-3	Methylene chloride	0.01805	1.28	H&S, 94	4.70	CWQS	not available	1.6168	NA	1.61676627	V	µg/kg
B-3	Toluene	0.01805	2.65	H&S, 94	17500.00	AWQC	not available	141119.6306	NA	141119.631	V	µg/kg
B-4	Antimony	0.01289	NA	NA	NA	NA	not available	2	7.671500	7.6715	M	mg/kg
B-4	Chromium	0.01289	NA	NA	NA	NA	not available	81	9.751100	81	M	mg/kg
B-4	Cobalt	0.01289	NA	NA	NA	NA	not available	—	6.856400	6.8564	M	mg/kg
B-4	Copper	0.01289	NA	NA	NA	NA	not available	34	11.931600	34	M	mg/kg
B-4	Iron	0.01289	NA	NA	NA	NA	not available	30,000	10216.219900	30000	M	mg/kg
B-4	Magnesium	0.01289	NA	NA	NA	NA	not available	EN	1800.036700	1800.0367	M	mg/kg
B-4	Manganese	0.01289	NA	NA	NA	NA	not available	460	274.733200	460	M	mg/kg
B-4	Potassium	0.01289	NA	NA	NA	NA	not available	EN	1143.054800	1143.0548	M	mg/kg
B-4	Silver	0.01289	NA	NA	NA	NA	not available	1	2.742800	2.7428	M	mg/kg
B-4	Sodium	0.01289	NA	NA	NA	NA	not available	EN	401.397500	401.3975	M	mg/kg
B-4	Vanadium	0.01289	NA	NA	NA	NA	not available	—	21.598900	21.5989	M	mg/kg
B-4	Zinc	0.01289	NA	NA	NA	NA	not available	150	71.947800	150	M	mg/kg
B-4	Aldrin	0.01289	2.61	K,S&C,93	1.50	AWQC	not available	7.8755	NA	7.87547553	P	µg/kg
B-4	Aroclor-1254	0.01289	5.93	H&S,94	0.014	AWQC	20000	257.7600	NA	257.76	P	µg/kg
B-4	Aroclor-1260	0.01289	7.02	H&S,95	0.014	AWQC	not available	1889.3550	NA	1889.35498	P	µg/kg
B-4	gamma-BHC (Lindane)	0.01289	3.66	H&S,96	0.080	AWQC	not available	4.7128	NA	4.71276207	P	µg/kg
B-4	Heptachlor	0.01289	4.23	H&S,97	0.0038	AWQC	not available	0.8317	NA	0.83170464	P	µg/kg
B-4	Americium-241	0.01289	NA	NA	NA	NA	not available	46,000	0.307400	46000	R	pCi/g
B-4	Gross alpha	0.01289	NA	NA	NA	NA	not available	—	28.105000	28.105	R	pCi/g
B-4	Gross beta	0.01289	NA	NA	NA	NA	not available	—	37.909400	37.9094	R	pCi/g
B-4	Plutonium-239/240	0.01289	NA	NA	NA	NA	not available	520,000	0.940500	520000	R	pCi/g
B-4	Radium-226	0.01289	NA	NA	NA	NA	not available	380,000	0.985300	380000	R	pCi/g
B-4	Radium-228	0.01289	NA	NA	NA	NA	not available	250,000	1.988300	250000	R	pCi/g
B-4	Strontium-89/90	0.01289	NA	NA	NA	NA	not available	6,700	0.276600	6700	R	pCi/g
B-4	Uranium-233/234	0.01289	NA	NA	NA	NA	not available	10,000	1.955900	10000	R	pCi/g
B-4	Uranium-235	0.01289	NA	NA	NA	NA	not available	10,000	0.073500	10000	R	pCi/g
B-4	Uranium-238	0.01289	NA	NA	NA	NA	not available	4,200	1.689500	4200	R	pCi/g

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
B-4	1,2,4-Trichlorobenzene	0.01289	3.16	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
B-4	2-Methylnaphthalene	0.01289	3.93	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
B-4	Acenaphthene	0.01289	3.76	H&S, 94	74.00	S&M,94	140000	1804.3200	NA	1804.32	S	µg/kg
B-4	Anthracene	0.01289	4.42	H&S, 94	0.0028	CWQS	not available	0.9492	NA	0.94916903	S	µg/kg
B-4	Benzo(a)anthracene	0.01289	5.6	H&S, 94	0.0028	CWQS	1317000	16973.4960	NA	16973.496	S	µg/kg
B-4	Benzo(a)pyrene	0.01289	6	H&S, 94	0.0028	CWQS	1063000	13699.9440	NA	13699.944	S	µg/kg
B-4	Benzo(b)fluoranthene	0.01289	5.74	K,S&C,93	0.0028	CWQS	not available	19.8310	NA	19.8309518	S	µg/kg
B-4	Benzo(ghi)perylene	0.01289	6.89	K,S&C,93	0.0028	CWQS	not available	280.1196	NA	280.119639	S	µg/kg
B-4	Benzo(k)fluoranthene	0.01289	6.64	K,S&C,93	0.0028	CWQS	not available	157.5228	NA	157.522849	S	µg/kg
B-4	Benzoic acid	0.01289	2.26	K,S&C,93	41.6	S&M,94	not available	97.5616	NA	97.5615874	S	µg/kg
B-4	Bis(2-ethylhexyl)phthalate	0.01289	9.44	H&S, 94	360.00	IRIS	not available	12778739830.3	NA	1.2779E+10	S	µg/kg
B-4	Butyl benzyl phthalate	0.01289	2.18	K,S&C,93	3.00	IRIS	not available	5.8520	NA	5.85203321	S	µg/kg
B-4	Chrysene	0.01289	5.39	K,S&C,93	0.0028	CWQS	not available	8.8582	NA	8.85816078	S	µg/kg
B-4	Di-N-octyl phthalate	0.01289	9.04	H&S, 94	not available	not available	not available	—	NA	NA	S	µg/kg
B-4	Dibenzo(ah)anthracene	0.01289	6.22	K,S&C,93	0.0028	CWQS	not available	59.8885	NA	59.888517	S	µg/kg
B-4	Dibenzofuran	0.01289	4.05	H&S, 94	NA	NA	not available	—	NA	NA	S	µg/kg
B-4	Fluoranthene	0.01289	5	H&S, 94	42.00	CWQS	1020000	13145.7600	NA	13145.76	S	µg/kg
B-4	Fluorene	0.01289	3.7	K,S&C,93	0.0028	CWQS	not available	0.1809	NA	0.18086043	S	µg/kg
B-4	Indeno(1,2,3-cd)pyrene	0.01289	7.49	K,S&C,93	0.0028	CWQS	not available	1115.1764	NA	1115.17637	S	µg/kg
B-4	Naphthalene	0.01289	3.24	H&S, 94	620	AWQC	not available	13886.0018	NA	13886.0018	S	µg/kg
B-4	Phenanthrene	0.01289	4.46	H&S, 94	0.0028	CWQS	123000	1585.2240	NA	1585.224	S	µg/kg
B-4	Phenol	0.01289	1.43	K,S&C,93	2560.00	IRIS	not available	888.0256	NA	888.025614	S	µg/kg
B-4	Pyrene	0.01289	4.81	K,S&C,93	0.0028	CWQS	1311000	16896.1680	NA	16896.168	S	µg/kg
B-4	2-Butanone	0.01289	0.09	K,S&C,93	20800.00	S&M,94	not available	329.7986	NA	329.798641	V	µg/kg
B-4	4-Methyl-2-pentanone	0.01289	0.79	K,S&C,93	164.00	S&M,94	not available	13.0325	NA	13.0325493	V	µg/kg
B-4	Acetone	0.01289	-0.24	H&S, 94	11200.00	S&M,94	not available	83.0622	NA	83.062223	V	µg/kg
B-4	Benzene	0.01289	2.06	H&S, 94	5300.00	IRIS	not available	7842.6241	NA	7842.62405	V	µg/kg
B-4	Methylene chloride	0.01289	1.28	H&S, 94	4.70	CWQS	not available	1.1542	NA	1.15420615	V	µg/kg
B-4	Toluene	0.01289	2.65	H&S, 94	17500.00	AWQC	not available	100745.0174	NA	100745.017	V	µg/kg
B-5	Antimony	0.01008	NA	NA	NA	NA	not available	2	7.671500	7.6715	M	mg/kg
B-5	Chromium	0.01008	NA	NA	NA	NA	not available	81	9.751100	81	M	mg/kg
B-5	Cobalt	0.01008	NA	NA	NA	NA	not available	—	6.856400	6.8564	M	mg/kg
B-5	Copper	0.01008	NA	NA	NA	NA	not available	34	11.931600	34	M	mg/kg

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
B-5	Iron	0.01008	NA	NA	NA	NA	not available	30,000	10216.219900	30000	M	mg/kg
B-5	Magnesium	0.01008	NA	NA	NA	NA	not available	EN	1800.036700	1800.0367	M	mg/kg
B-5	Manganese	0.01008	NA	NA	NA	NA	not available	460	274.733200	460	M	mg/kg
B-5	Potassium	0.01008	NA	NA	NA	NA	not available	EN	1143.054800	1143.0548	M	mg/kg
B-5	Silver	0.01008	NA	NA	NA	NA	not available	1	2.742800	2.7428	M	mg/kg
B-5	Sodium	0.01008	NA	NA	NA	NA	not available	EN	401.397500	401.3975	M	mg/kg
B-5	Vanadium	0.01008	NA	NA	NA	NA	not available	—	21.598900	21.5989	M	mg/kg
B-5	Zinc	0.01008	NA	NA	NA	NA	not available	150	71.947800	150	M	mg/kg
B-5	Aldrin	0.01008	2.61	K,S&C,93	1.50	AWQC	not available	6.1608	NA	6.16081194	P	µg/kg
B-5	Aroclor-1254	0.01008	5.93	H&S,94	0.014	AWQC	20000	201.6400	NA	201.64	P	µg/kg
B-5	Aroclor-1260	0.01008	7.02	H&S,95	0.014	AWQC	not available	1478.0010	NA	1478.001	P	µg/kg
B-5	gamma-BHC (Lindane)	0.01008	3.66	H&S,96	0.080	AWQC	not available	3.6867	NA	3.6866905	P	µg/kg
B-5	Heptachlor	0.01008	4.23	H&S,97	0.0038	AWQC	not available	0.6506	NA	0.65062432	P	µg/kg
B-5	Americium-241	0.01008	NA	NA	NA	NA	not available	46,000	0.307400	46000	R	pCi/g
B-5	Gross alpha	0.01008	NA	NA	NA	NA	not available	—	28.105000	28.105	R	pCi/g
B-5	Gross beta	0.01008	NA	NA	NA	NA	not available	—	37.909400	37.9094	R	pCi/g
B-5	Plutonium-239/240	0.01008	NA	NA	NA	NA	not available	520,000	0.940500	520000	R	pCi/g
B-5	Radium-226	0.01008	NA	NA	NA	NA	not available	380,000	0.985300	380000	R	pCi/g
B-5	Radium-228	0.01008	NA	NA	NA	NA	not available	250,000	1.988300	250000	R	pCi/g
B-5	Strontium-89/90	0.01008	NA	NA	NA	NA	not available	6,700	0.276600	6700	R	pCi/g
B-5	Uranium-233/234	0.01008	NA	NA	NA	NA	not available	10,000	1.955900	10000	R	pCi/g
B-5	Uranium-235	0.01008	NA	NA	NA	NA	not available	10,000	0.073500	10000	R	pCi/g
B-5	Uranium-238	0.01008	NA	NA	NA	NA	not available	4,200	1.689500	4200	R	pCi/g
B-5	1,2,4-Trichlorobenzene	0.01008	3.16	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
B-5	2-Methylnaphthalene	0.01008	3.93	K,S&C,93	not available	not available	not available	—	NA	NA	S	µg/kg
B-5	Acenaphthene	0.01008	3.76	H&S, 94	74.00	S&M,94	140000	1411.4800	NA	1411.48	S	µg/kg
B-5	Anthracene	0.01008	4.42	H&S, 94	0.0028	CWQS	not available	0.7425	NA	0.74251413	S	µg/kg
B-5	Benzo(a)anthracene	0.01008	5.6	H&S, 94	0.0028	CWQS	1317000	13277.9940	NA	13277.994	S	µg/kg
B-5	Benzo(a)pyrene	0.01008	6	H&S, 94	0.0028	CWQS	1063000	10717.1660	NA	10717.166	S	µg/kg
B-5	Benzo(b)fluoranthene	0.01008	5.74	K,S&C,93	0.0028	CWQS	not available	15.5133	NA	15.5133191	S	µg/kg
B-5	Benzo(ghi)perylene	0.01008	6.89	K,S&C,93	0.0028	CWQS	not available	219.1315	NA	219.131456	S	µg/kg
B-5	Benzo(k)fluoranthene	0.01008	6.64	K,S&C,93	0.0028	CWQS	not available	123.2267	NA	123.226673	S	µg/kg
B-5	Benzoic acid	0.01008	2.26	K,S&C,93	41.60	S&M,94	not available	76.3203	NA	76.3202921	S	µg/kg

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
B-5	Bis(2-ethylhexyl)phthalate	0.01008	9.44	H&S, 94	360.00	IRIS	not available	9996528163.3	NA	9996528163	S	µg/kg
B-5	Butyl benzyl phthalate	0.01008	2.18	K,S&C,93	3.00	IRIS	not available	4.5779	NA	4.57791735	S	µg/kg
B-5	Chrysene	0.01008	5.39	K,S&C,93	0.0028	CWQS	not available	6.9295	NA	6.92954508	S	µg/kg
B-5	Di-N-octyl phthalate	0.01008	9.04	H&S, 94	not available	not available	not available	—	NA	NA	S	µg/kg
B-5	Dibenzo(ah)anthracene	0.01008	6.22	K,S&C,93	0.0028	CWQS	not available	46.8495	NA	46.8494746	S	µg/kg
B-5	Dibenzofuran	0.01008	4.05	H&S, 94	NA	NA	not available	—	NA	NA	S	µg/kg
B-5	Fluoranthene	0.01008	5	H&S, 94	42.00	CWQS	1020000	10283.6400	NA	10283.64	S	µg/kg
B-5	Fluorene	0.01008	3.7	K,S&C,93	0.0028	CWQS	not available	0.1415	NA	0.14148315	S	µg/kg
B-5	Indeno(1,2,3-cd)pyrene	0.01008	7.49	K,S&C,93	0.0028	CWQS	not available	872.3780	NA	872.378039	S	µg/kg
B-5	Naphthalene	0.01008	3.24	H&S, 94	620	AWQC	not available	10862.7149	NA	10862.7149	S	µg/kg
B-5	Phenanthrene	0.01008	4.46	H&S, 94	0.0028	CWQS	123000	1240.0860	NA	1240.086	S	µg/kg
B-5	Phenol	0.01008	1.43	K,S&C,93	2560.00	IRIS	not available	694.6830	NA	694.68298	S	µg/kg
B-5	Pyrene	0.01008	4.81	K,S&C,93	0.00	CWQS	1311000	13217.5020	NA	13217.502	S	µg/kg
B-5	2-Butanone	0.01008	0.09	K,S&C,93	20800.00	S&M,94	not available	257.9943	NA	257.994251	V	µg/kg
B-5	4-Methyl-2-pentanone	0.01008	0.79	K,S&C,93	164.00	S&M,94	not available	10.1951	NA	10.1950777	V	µg/kg
B-5	Acetone	0.01008	-0.24	H&S, 94	11200.00	S&M,94	not available	64.9778	NA	64.977757	V	µg/kg
B-5	Benzene	0.01008	2.06	H&S, 94	5300.00	IRIS	not available	6135.1130	NA	6135.11295	V	µg/kg
B-5	Methylene chloride	0.01008	1.28	H&S, 94	4.70	CWQS	not available	0.9029	NA	0.90291018	V	µg/kg
B-5	Toluene	0.01008	2.65	H&S, 94	17500.00	AWQC	not available	78810.6196	NA	78810.6196	V	µg/kg
C-1	Mercury	0.02533	NA	NA	NA	NA	NA	0.15	2	2	M	mg/kg
C-1	Zinc	0.02533	NA	NA	NA	NA	not available	150	71.947800	150	M	mg/kg
C-1	Americium-241	0.02533	NA	NA	NA	NA	not available	46,000	0.307400	46000	R	pCi/g
C-1	Gross alpha	0.02533	NA	NA	NA	NA	not available	—	28.105000	28.105	R	pCi/g
C-1	Gross beta	0.02533	NA	NA	NA	NA	not available	—	37.909400	37.9094	R	pCi/g
C-1	Plutonium-239/240	0.02533	NA	NA	NA	NA	not available	520,000	0.940500	520000	R	pCi/g
C-1	Uranium-233/234	0.02533	NA	NA	NA	NA	not available	10,000	1.955900	10000	R	pCi/g
C-1	Uranium-235	0.02533	NA	NA	NA	NA	not available	10,000	0.073500	10000	R	pCi/g
C-1	Uranium-238	0.02533	NA	NA	NA	NA	not available	4,200	1.689500	4200	R	pCi/g
C-1	Benzoic acid	0.02533	2.26	K,S&C,93	41.60	S&M,94	not available	191.7697	NA	191.769685	S	µg/kg
C-1	Di-N-butyl phthalate	0.02533	4.03	H&S, 94	3.00	IRIS	not available	814.3440	NA	814.343957	S	µg/kg
C-1	Fluoranthene	0.02533	5	H&S, 94	42.00	CWQS	1020000	25839.6600	NA	25839.66	S	µg/kg
C-1	Phenol	0.02533	1.43	K,S&C,93	2560.00	IRIS	not available	1745.5271	NA	1745.52707	S	µg/kg
C-1	Toluene	0.02533	2.65	H&S, 94	17500.00	AWQC	not available	198027.1202	NA	198027.1[illegible]	V	µg/kg

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
C-2	Mercury	0.019	NA	NA	NA	NA	NA	0.15	2	2	M	mg/kg
C-2	Zinc	0.019	NA	NA	NA	NA	not available	150	71.947800	150	M	mg/kg
C-2	Americium-241	0.019	NA	NA	NA	NA	not available	46,000	0.307400	46000	R	pCi/g
C-2	Plutonium-239/240	0.019	NA	NA	NA	NA	not available	520,000	0.940500	520000	R	pCi/g
C-2	Uranium-233/234	0.019	NA	NA	NA	NA	not available	10,000	1.955900	10000	R	pCi/g
C-2	Uranium-235	0.019	NA	NA	NA	NA	not available	10,000	0.073500	10000	R	pCi/g
C-2	Uranium-238	0.019	NA	NA	NA	NA	not available	4,200	1.689500	4200	R	pCi/g
C-2	Benzoic acid	0.019	2.26	K,S&C,93	41.60	S&M,94	not available	143.8292	NA	143.829156	S	µg/kg
C-2	Di-N-butyl phthalate	0.019	4.03	H&S, 94	3.00	IRIS	not available	610.7660	NA	610.766004	S	µg/kg
C-2	Fluoranthene	0.019	5	H&S, 94	42.00	CWQS	1020000	19380.0000	NA	19380	S	µg/kg
C-2	Phenol	0.019	1.43	K,S&C,93	2560.00	IRIS	not available	1309.1625	NA	1309.16253	S	µg/kg
C-2	Toluene	0.019	2.65	H&S, 94	17500.00	AWQC	not available	148522.2944	NA	148522.294	V	µg/kg
LFP	Aluminum	0.00837	NA	NA	NA	NA	not available	not available	28025.00000	28025	M	mg/kg
LFP	Arsenic	0.00837	NA	NA	NA	NA	not available	8.2	2.969000	8.2	M	mg/kg
LFP	Barium	0.00837	NA	NA	NA	NA	not available	20	90.408000	90.408	M	mg/kg
LFP	Beryllium	0.00837	NA	NA	NA	NA	not available	not available	1.500000	1.5	M	mg/kg
LFP	Calcium	0.00837	NA	NA	NA	NA	not available	EN	4686.655800	4686.6558	M	mg/kg
LFP	Chromium	0.00837	NA	NA	NA	NA	not available	81	9.751100	81	M	mg/kg
LFP	Copper	0.00837	NA	NA	NA	NA	not available	34	11.931600	34	M	mg/kg
LFP	Iron	0.00837	NA	NA	NA	NA	not available	30,000	10216.219900	30000	M	mg/kg
LFP	Lead	0.00837	NA	NA	NA	NA	not available	47	39.400000	46.7	M	mg/kg
LFP	Magnesium	0.00837	NA	NA	NA	NA	not available	EN	1800.036700	1800.0367	M	mg/kg
LFP	Nickel	0.00837	NA	NA	NA	NA	not available	21	8.173800	21	M	mg/kg
LFP	Potassium	0.00837	NA	NA	NA	NA	not available	EN	1143.054800	1143.0548	M	mg/kg
LFP	Selenium	0.00837	NA	NA	NA	NA	not available	not available	1.100000	1.1	M	mg/kg
LFP	Sodium	0.00837	NA	NA	NA	NA	not available	EN	401.397500	401.3975	M	mg/kg
LFP	Strontium	0.00837	NA	NA	NA	NA	not available	—	49.903000	49.903	M	mg/kg
LFP	Vanadium	0.00837	NA	NA	NA	NA	not available	—	21.598900	21.5989	M	mg/kg
LFP	Zinc	0.00837	NA	NA	NA	NA	not available	150	71.947800	150	M	mg/kg
LFP	Cesium-137	0.00837	NA	NA	NA	NA	not available	4800	0.862000	4800	R	pCi/g
LFP	Acenaphthene	0.00837	3.76	H&S, 94	74.00	S&M,94	140000	1171.3800	NA	1171.38	S	µg/kg
LFP	Anthracene	0.00837	4.42	H&S, 94	0.0028	CWQS	not available	0.6162	NA	0.61620866	S	µg/kg
LFP	Benzo(a)anthracene	0.00837	5.6	H&S, 94	0.0028	CWQS	1317000	11019.3390	NA	11019.339	S	µg/kg
LFP	Benzo(a)pyrene	0.00837	6	H&S, 94	0.0028	CWQS	1063000	8894.1210	NA	8894.121	S	µg/kg

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Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
LFP	Benzo(b)fluoranthene	0.00837	5.74	K,S&C,93	0.0028	CWQS	not available	12.8744	NA	12.8744238	S	µg/kg
LFP	Benzo(ghi)perylene	0.00837	6.89	K,S&C,93	0.0028	CWQS	not available	181.8561	NA	181.856069	S	µg/kg
LFP	Benzo(k)fluoranthene	0.00837	6.64	K,S&C,93	0.0028	CWQS	not available	102.2652	NA	102.265183	S	µg/kg
LFP	Benzoic acid	0.00837	2.26	K,S&C,93	41.60	S&M,94	not available	63.3378	NA	63.3378183	S	µg/kg
LFP	Bis(2-chloroisopropyl)ether	0.00837	1.79	K,S&C,94	NA	NA	not available	—	NA	NA	S	µg/kg
LFP	Bis(2-ethylhexyl)phthalate	0.00837	9.44	H&S, 94	360.00	IRIS	not available	8296067361.9	NA	8296067362	S	µg/kg
LFP	Chrysene	0.00837	5.39	K,S&C,93	0.0028	CWQS	not available	5.7508	NA	5.75079386	S	µg/kg
LFP	Fluoranthene	0.00837	5	H&S, 94	42.00	CWQS	1020000	8534.3400	NA	8534.34	S	µg/kg
LFP	Fluorene	0.00837	3.7	K,S&C,93	0.0028	CWQS	not available	0.1174	NA	0.11741614	S	µg/kg
LFP	Indeno(1,2,3-cd)pyrene	0.00837	7.49	K,S&C,93	0.0028	CWQS	not available	723.9821	NA	723.982053	S	µg/kg
LFP	Phenanthrene	0.00837	4.46	H&S, 94	0.0028	CWQS	123000	1029.1410	NA	1029.141	S	µg/kg
LFP	Pyrene	0.00837	4.81	K,S&C,93	0.0028	CWQS	1311000	10969.1370	NA	10969.137	S	µg/kg
LFP	2-Butanone	0.00837	0.09	K,S&C,93	20800.00	S&M,94	not available	214.1081	NA	214.108103	V	µg/kg
LFP	Acetone	0.00837	-0.24	H&S, 94	11200.00	S&M,94	not available	53.9247	NA	53.9247067	V	µg/kg
LFP	Toluene	0.00837	2.65	H&S, 94	17500.00	AWQC	not available	65404.5283	NA	65404.5283	V	µg/kg
NWC	Arsenic	0.00822	NA	NA	NA	NA	not available	8.2	2.969000	8.2	M	mg/kg
NWC	Barium	0.00822	NA	NA	NA	NA	not available	20	90.408000	90.408	M	mg/kg
NWC	Calcium	0.00822	NA	NA	NA	NA	not available	EN	4686.655800	4686.6558	M	mg/kg
NWC	Cobalt	0.00822	NA	NA	NA	NA	not available	—	6.856400	6.8564	M	mg/kg
NWC	Iron	0.00822	NA	NA	NA	NA	not available	30,000	10216.219900	30000	M	mg/kg
NWC	Magnesium	0.00822	NA	NA	NA	NA	not available	EN	1800.036700	1800.0367	M	mg/kg
NWC	Manganese	0.00822	NA	NA	NA	NA	not available	460	274.733200	460	M	mg/kg
NWC	Strontium	0.00822	NA	NA	NA	NA	not available	—	49.903000	49.903	M	mg/kg
NWC	Vanadium	0.00822	NA	NA	NA	NA	not available	—	21.598900	21.5989	M	mg/kg
NWC	Zinc	0.00822	NA	NA	NA	NA	not available	150	71.947800	150	M	mg/kg
NWC	Americium-241	0.00822	NA	NA	NA	NA	not available	46,000	0.307400	46000	R	pCi/g
NWC	Plutonium-239/240	0.00822	NA	NA	NA	NA	not available	520,000	0.940500	520000	R	pCi/g
NWC	Tritium	0.00822	NA	NA	NA	NA	not available	350,000	263.147500	350000	R	pCi/L
NWC	Acenaphthene	0.00822	3.76	H&S, 94	74.00	S&M,94	140000	1150.2400	NA	1150.24	S	µg/kg
NWC	Anthracene	0.00822	4.42	H&S, 94	0.0028	CWQS	not available	0.6051	NA	0.60508789	S	µg/kg
NWC	Benzo(a)anthracene	0.00822	5.6	H&S, 94	0.0028	CWQS	1317000	10820.4720	NA	10820.472	S	µg/kg
NWC	Benzo(a)pyrene	0.00822	6	H&S, 94	0.0028	CWQS	1063000	8733.6080	NA	8733.608	S	µg/kg
NWC	Benzo(b)fluoranthene	0.00822	5.74	K,S&C,93	0.0028	CWQS	not available	12.6421	NA	12.6420779	S	µg/kg

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
NWC	Benzo(ghi)perylene	0.00822	6.89	K,S&C,93	0.0028	CWQS	not available	178.5741	NA	178.574097	S	µg/kg
NWC	Benzo(k)fluoranthene	0.00822	6.64	K,S&C,93	0.0028	CWQS	not available	100.4196	NA	100.419594	S	µg/kg
NWC	Benzoic acid	0.00822	2.26	K,S&C,93	41.60	S&M,94	not available	62.1948	NA	62.194755	S	µg/kg
NWC	Benzyl alcohol	0.00822	1.98	K,S&C,93	58.00	S&M,94	not available	45.5081	NA	45.5080707	S	µg/kg
NWC	Bis(2-ethylhexyl)phthalate	0.00822	9.44	H&S, 94	360.00	IRIS	not available	8146347489.6	NA	8146347490	S	µg/kg
NWC	Butyl benzyl phthalate	0.00822	2.18	K,S&C,93	3.00	IRIS	not available	3.7306	NA	3.73062577	S	µg/kg
NWC	Chrysene	0.00822	5.39	K,S&C,93	0.0028	CWQS	not available	5.6470	NA	5.64700877	S	µg/kg
NWC	Di-N-butyl phthalate	0.00822	4.03	H&S, 94	3.00	IRIS	not available	264.1081	NA	264.108078	S	µg/kg
NWC	Dibenzofuran	0.00822	4.05	H&S, 94	NA	NA	not available	—	NA	NA	S	µg/kg
NWC	Fluoranthene	0.00822	5	H&S, 94	42.00	CWQS	1020000	8380.3200	NA	8380.32	S	µg/kg
NWC	Fluorene	0.00822	3.7	K,S&C,93	0.0028	CWQS	not available	0.1153	NA	0.11529712	S	µg/kg
NWC	Indeno(1,2,3-cd)pyrene	0.00822	7.49	K,S&C,93	0.0028	CWQS	not available	710.9163	NA	710.916284	S	µg/kg
NWC	Naphthalene	0.00822	3.24	H&S, 94	620	AWQC	not available	8852.2184	NA	8852.2184	S	µg/kg
NWC	Phenanthrene	0.00822	4.46	H&S, 94	0.0028	CWQS	123000	1010.5680	NA	1010.568	S	µg/kg
NWC	Pyrene	0.00822	4.81	K,S&C,93	0.0028	CWQS	1311000	10771.1760	NA	10771.176	S	µg/kg
NWC	Acetone	0.00822	-0.24	H&S, 94	11200.00	S&M,94	not available	52.9515	NA	52.9515227	V	µg/kg
NWC	Methylene chloride	0.00822	1.28	H&S, 94	4.70	CWQS	not available	0.7358	NA	0.73579747	V	µg/kg
SWC	Arsenic	0.01089	NA	NA	NA	NA	not available	8.2	2.969000	8.2	M	mg/kg
SWC	Barium	0.01089	NA	NA	NA	NA	not available	20	90.408000	90.408	M	mg/kg
SWC	Calcium	0.01089	NA	NA	NA	NA	not available	EN	4686.655800	4686.6558	M	mg/kg
SWC	Cobalt	0.01089	NA	NA	NA	NA	not available	—	6.856400	6.8564	M	mg/kg
SWC	Iron	0.01089	NA	NA	NA	NA	not available	30,000	10216.219900	30000	M	mg/kg
SWC	Magnesium	0.01089	NA	NA	NA	NA	not available	EN	1800.036700	1800.0367	M	mg/kg
SWC	Manganese	0.01089	NA	NA	NA	NA	not available	460	274.733200	460	M	mg/kg
SWC	Strontium	0.01089	NA	NA	NA	NA	not available	—	49.903000	49.903	M	mg/kg
SWC	Vanadium	0.01089	NA	NA	NA	NA	not available	—	21.598900	21.5989	M	mg/kg
SWC	Zinc	0.01089	NA	NA	NA	NA	not available	150	71.947800	150	M	mg/kg
SWC	Americium-241	0.01089	NA	NA	NA	NA	not available	46,000	0.307400	46000	R	pCi/g
SWC	Plutonium-239/240	0.01089	NA	NA	NA	NA	not available	520,000	0.940500	520000	R	pCi/g
SWC	Tritium	0.01089	NA	NA	NA	NA	not available	350,000	263.147500	350000	R	pCi/L
SWC	Acenaphthene	0.01089	3.76	H&S, 94	74.00	S&M,94	140000	1525.0200	NA	1525.02	S	µg/kg
SWC	Anthracene	0.01089	4.42	H&S, 94	0.0028	CWQS	not available	0.8022	NA	0.80224226	S	µg/kg
SWC	Benzo(a)anthracene	0.01089	5.6	H&S, 94	0.0028	CWQS	1317000	14346.0810	NA	14346.081	S	µg/kg

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Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
SWC	Benzo(a)pyrene	0.01089	6	H&S, 94	0.0028	CWQS	1063000	11579.2590	NA	11579.259	S	µg/kg
SWC	Benzo(b)fluoranthene	0.01089	5.74	K,S&C,93	0.0028	CWQS	not available	16.7612	NA	16.7612165	S	µg/kg
SWC	Benzo(ghi)perylene	0.01089	6.89	K,S&C,93	0.0028	CWQS	not available	236.7585	NA	236.758476	S	µg/kg
SWC	Benzo(k)fluoranthene	0.01089	6.64	K,S&C,93	0.0028	CWQS	not available	133.1391	NA	133.139075	S	µg/kg
SWC	Benzoic acid	0.01089	2.26	K,S&C,93	41.60	S&M,94	not available	82.4595	NA	82.459526	S	µg/kg
SWC	Benzyl alcohol	0.01089	1.98	K,S&C,93	58.00	S&M,94	not available	60.3359	NA	60.3358586	S	µg/kg
SWC	Bis(2-ethylhexyl)phthalate	0.01089	9.44	H&S, 94	360.00	IRIS	not available	10800652776	NA	1.0801E+10	S	µg/kg
SWC	Butyl benzyl phthalate	0.01089	2.18	K,S&C,93	3.00	IRIS	not available	4.9462	NA	4.9461668	S	µg/kg
SWC	Chrysene	0.01089	5.39	K,S&C,93	0.0028	CWQS	not available	7.4870	NA	7.48696038	S	µg/kg
SWC	Di-N-butyl phthalate	0.01089	4.03	H&S, 94	3.00	IRIS	not available	350.1618	NA	350.161794	S	µg/kg
SWC	Dibenzofuran	0.01089	4.05	H&S, 94	NA	NA	not available	—	NA	NA	S	µg/kg
SWC	Fluoranthene	0.01089	5	H&S, 94	42.00	CWQS	1020000	11110.8600	NA	11110.86	S	µg/kg
SWC	Fluorene	0.01089	3.7	K,S&C,93	0.0028	CWQS	not available	0.1529	NA	0.15286411	S	µg/kg
SWC	Indeno(1,2,3-cd)pyrene	0.01089	7.49	K,S&C,93	0.0028	CWQS	not available	942.5525	NA	942.552468	S	µg/kg
SWC	Naphthalene	0.01089	3.24	H&S, 94	620	AWQC	not available	11736.5159	NA	11736.5159	S	µg/kg
SWC	Phenanthrene	0.01089	4.46	H&S, 94	0.0028	CWQS	123000	1339.8390	NA	1339.839	S	µg/kg
SWC	Pyrene	0.01089	4.81	K,S&C,93	0.0028	CWQS	1311000	14280.7230	NA	14280.723	S	µg/kg
SWC	Acetone	0.01089	-0.24	H&S, 94	11200.00	S&M,94	not available	70.2046	NA	70.2045931	V	µg/kg
SWC	Methylene chloride	0.01089	1.28	H&S, 94	4.70	CWQS	not available	0.9755	NA	0.97554063	V	µg/kg
W&I	Antimony	0.00862	NA	NA	NA	NA	not available	2	7.6715	7.6715	M	mg/kg
W&I	Chromium	0.00862	NA	NA	NA	NA	not available	81	9.7511	81	M	mg/kg
W&I	Cobalt	0.00862	NA	NA	NA	NA	not available	—	6.8564	6.8564	M	mg/kg
W&I	Copper	0.00862	NA	NA	NA	NA	not available	34	11.9316	34	M	mg/kg
W&I	Iron	0.00862	NA	NA	NA	NA	not available	30000	10216.2199	30000	M	mg/kg
W&I	Magnesium	0.00862	NA	NA	NA	NA	not available	EN	1800.0367	1800.0367	M	mg/kg
W&I	Manganese	0.00862	NA	NA	NA	NA	not available	460	274.7332	460	M	mg/kg
W&I	Potassium	0.00862	NA	NA	NA	NA	not available	EN	1143.0548	1143.0548	M	mg/kg
W&I	Silver	0.00862	NA	NA	NA	NA	not available	1	2.7428	2.7428	M	mg/kg
W&I	Sodium	0.00862	NA	NA	NA	NA	not available	EN	401.3975	401.3975	M	mg/kg
W&I	Vanadium	0.00862	NA	NA	NA	NA	not available	—	21.5989	21.5989	M	mg/kg
W&I	Zinc	0.00862	NA	NA	NA	NA	not available	150	71.9478	150	M	mg/kg
W&I	Aldrin	0.00862	2.61	K,S&C,93	0.00013	CWQS	not available	0.00045651	NA	0.00045651	P	ug/kg
W&I	Aroclor-1254	0.00862	5.93	H&S,94	0.000044	CWQS	20000	172.4	NA	172.4	P	ug/kg

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
W&I	Aroclor-1260	0.00862	7.02	H&S,95	0.000044	CWQS	not available	3.971549157	NA	3.97154916	P	ug/kg
W&I	Gamma-BHC (Lindane)	0.00862	3.66	H&S,96	0.019	CWQS	not available	0.748619037	NA	0.74861904	P	ug/kg
W&I	Heptachlor	0.00862	4.23	H&S,97	0.00021	CWQS	not available	0.030741607	NA	0.03074161	P	ug/kg
W&I	Americium-241	0.00862	NA	NA	NA	NA	not available	46000	0.3074	46000	R	pCi/g
W&I	Gross alpha	0.00862	NA	NA	NA	NA	not available	—	28.105	28.105	R	pCi/g
W&I	Gross beta	0.00862	NA	NA	NA	NA	not available	—	37.9094	37.9094	R	pCi/g
W&I	Plutonium-239/240	0.00862	NA	NA	NA	NA	not available	520000	0.9405	520000	R	pCi/g
W&I	Radium-226	0.00862	NA	NA	NA	NA	not available	380000	0.9853	380000	R	pCi/g
W&I	Radium-228	0.00862	NA	NA	NA	NA	not available	250000	1.9883	250000	R	pCi/g
W&I	Strontium-89/90	0.00862	NA	NA	NA	NA	not available	6700	0.2766	6700	R	pCi/g
W&I	Uranium-233/234	0.00862	NA	NA	NA	NA	not available	10000	1.9559	10000	R	pCi/g
W&I	Uranium-235	0.00862	NA	NA	NA	NA	not available	10000	0.0735	10000	R	pCi/g
W&I	Uranium-238	0.00862	NA	NA	NA	NA	not available	4200	1.6895	4200	R	pCi/g
W&I	1 2 4 Trichlorobenzene	0.00862	3.16	K,S&C,93	not available	not available	not available	—	NA	NA	S	ug/kg
W&I	2 Methylnaphthalene	0.00862	3.93	K,S&C,93	not available	not available	not available	—	NA	NA	S	ug/kg
W&I	Acenaphthene	0.00862	3.76	H&S, 94	74	S&M,94	140000	1206.8	NA	1206.8	S	ug/kg
W&I	Anthracene	0.00862	4.42	H&S, 94	0.0028	CWQS	not available	0.634841483	NA	0.63484148	S	ug/kg
W&I	Benzo(a)anthracene	0.00862	5.6	H&S, 94	0.0028	CWQS	1317000	11352.54	NA	11352.54	S	ug/kg
W&I	Benzo(a)pyrene	0.00862	6	H&S, 94	0.0028	CWQS	1063000	9163.06	NA	9163.06	S	ug/kg
W&I	Benzo(b)fluoranthene	0.00862	5.74	K,S&C,93	0.0028	CWQS	not available	13.26371853	NA	13.2637185	S	ug/kg
W&I	Benzo(ghi)perylene	0.00862	6.89	K,S&C,93	0.0028	CWQS	not available	187.3550041	NA	187.355004	S	ug/kg
W&I	Benzo(k)fluoranthene	0.00862	6.64	K,S&C,93	0.0028	CWQS	not available	105.3574613	NA	105.357461	S	ug/kg
W&I	Benzoic acid	0.00862	2.26	K,S&C,93	41.6	S&M,94	not available	65.25301703	NA	65.253017	S	ug/kg
W&I	Bis(2-ethylhexyl)phthalate	0.00862	9.44	H&S, 94	360	IRIS	not available	8546922512	NA	8546922512	S	ug/kg
W&I	Butly benzyl phthalate	0.00862	2.18	K,S&C,93	3	IRIS	not available	3.914069388	NA	3.91406939	S	ug/kg
W&I	Chrysene	0.00862	5.39	K,S&C,93	0.0028	CWQS	not available	5.924685439	NA	5.92468544	S	ug/kg
W&I	Di-N-octyl phthalate	0.00862	9.04	H&S, 94	not available	not available	not available	—	NA	NA	S	ug/kg
W&I	Dibenzo(ah)anthracene	0.00862	6.22	K,S&C,93	0.0028	CWQS	not available	40.0557896	NA	40.0557896	S	ug/kg
W&I	Dibenzofuran	0.00862	4.05	H&S, 94	NA	NA	not available	—	NA	NA	S	ug/kg
W&I	Fluoranthene	0.00862	5	H&S, 94	42	CWQS	1020000	8792.4	NA	8792.4	S	ug/kg
W&I	Fluorene	0.00862	3.7	K,S&C,93	0.0028	CWQS	not available	0.120966551	NA	0.12096655	S	ug/kg
W&I	Indeno(1,2,3-cd)Pyrene	0.00862	7.49	K,S&C,93	0.0028	CWQS	not available	745.8737056	NA	745.873706	S	ug/kg

Attachment 2
Table 13
Pond-Specific Sediment Toxicity Reference Values

Pond	Analyte	f_{oc}	log K_{oc}	log K_{oc} Source	Water Quality Standard	Water Quality Standard Source	Interim Sediment Quality Criteria[1]	Sediment Quality Benchmark	Background UCL_{95}[2]	Toxicity Reference Value	Group	Units
W&I	Naphthalene	0.00862	3.24	H&S, 94	0.0028	CWQS	not available	0.041943561	NA	0.04194356	S	ug/kg
W&I	Phenanthrene	0.00862	4.46	H&S, 94	0.0028	CWQS	123000	1060.26	NA	1060.26	S	ug/kg
W&I	Phenol	0.00862	1.43	K,S&C,93	2560	IRIS	not available	593.9463683	NA	593.946368	S	ug/kg
W&I	Pyrene	0.00862	4.81	K,S&C,93	0.0028	CWQS	1311000	11300.82	NA	11300.82	S	ug/kg
W&I	2-butanone	0.00862	0.09	K,S&C,93	20800	S&M,94	not available	220.5822695	NA	220.58227	V	ug/kg
W&I	4-Methyl-2-Pentanone	0.00862	0.79	K,S&C,93	164	S&M,94	not available	8.716680222	NA	8.71668022	V	ug/kg
W&I	Acetone	0.00862	-0.24	H&S, 94	11200	S&M,94	not available	55.55527331	NA	55.5552733	V	ug/kg
W&I	Benzene	0.00862	2.06	H&S, 94	5300	IRIS	not available	5245.454635	NA	5245.45464	V	ug/kg
W&I	Methylene chloride	0.00862	1.28	H&S, 94	4.7	CWQS	not available	0.771978355	NA	0.77197836	V	ug/kg
W&I	Toluene	0.00862	2.65	H&S, 94	17500	H&S, 94	not available	67382.21988	NA	6.74E+04	V	ug/kg
WOM	Copper	0.0175	NA	NA	NA	NA	not available	34	11.931600	34	M	mg/kg
WOM	Mercury	0.0175	NA	NA	NA	NA	not available	0.15	0.1	0.15	M	mg/kg
WOM	Zinc	0.0175	NA	NA	NA	NA	not available	150	71.947800	150	M	mg/kg
WOM	Americium 241	0.0175	NA	NA	NA	NA	not available	46,000	0.307400	46000	R	pCi/g
WOM	Plutonium-239/240	0.0175	NA	NA	NA	NA	not available	520,000	0.940500	520000	R	pCi/g
WOM	Tritium	0.0175	NA	NA	NA	NA	not available	350,000	263.147500	350000	R	pCi/L

[1]Interim Sediment Quality Criterion from EPA
[2]Sullivan 1995
foc - fraction of organic carbon in sediment
Koc - octanol-water partition coefficient
NA - not applicable

H&S, 94 - Hull and Suter (1994)
K,S,&C,93 - Knox, Sabatini, and Canter (1993)
AWQC - Ambient Water Quality Criteria from EPA
CWQS - Colorado Water Quality Standards
S&M,94 - Suter and Mabrey (1994)

Attachment 2
Table 14
RFETS-Specific Radionuclide Benchmark Concentrations[1] for Limiting Species in Soil, Sediment, and Water

Radionuclide	Benchmark in Soil (pCi/g)[2]	Benchmark in Sediment (pCi/g)[3]	Benchmark in Water (pCi/L)[4]
Americium-241	1.9×10^3	4.6×10^4	1.3×10^3
Cesium-137	8.4×10^1	4.8×10^3	8.2×10^3
Plutonium-239/240	3.8×10^3	5.2×10^5	1.0×10^2
Radium-226	5.4×10^0	3.8×10^5	3.8×10^2
Radium-228	3.5×10^0	2.5×10^5	2.5×10^2
Strontium-89/90	1.2×10^2	3.5×10^3	2.7×10^5
Tritium	3.5×10^5	3.5×10^5	1.9×10^8
Uranium-233/234	1.8×10^3	1.0×10^4	4.3×10^3
Uranium-235	1.9×10^3	1.0×10^4	4.3×10^3
Uranium-238	1.6×10^3	4.2×10^3	4.4×10^3

[1]No background comparison was performed because the benchmarks are RFETS-specific.
[2]Soil benchmarks that would cause a 100-mrad/d (1-mGy/d) dose rate to small mammals (limiting species).
[3]Sediment benchmarks that would cause a 100-mrad/d (1-mGy/d) external dose rate to aquatic species (limiting species).
[4]Water concentration benchmarks that would cause a 100-mrad/d (1-mGy/d) dose rate to aquatic species (limiting species).
From Higley and Kuperman (1995), Radiological Benchmarks for Wildlife at Rocky Flats Environmental Technology Site.

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Attachment 3
Data Management

Attachment 3
Table 1
Definition of Data Validation Codes

Code	Definition	Include in Data Analysis
A	Acceptable result, usable with qualification	yes
JA	Acceptable result (for estimated value)	yes
P	Undefined	no
R	Rejected result, unacceptable for use	no
V	Valid result, usable without qualification	yes
Y	Analytical results in validation process	yes
Z	Validation not required or performed	no

Attachment 3
Table 2
Definition of Laboratory Qualifiers

Qualifier	Definition	Include in Data Analysis	Detected ("Hit")	Value for Statistical Analysis
+	Inorganics: correlation coefficient for the matrix spike analysis is less than 0.995 (estimated value)	yes	yes	result
*	Inorganics: duplicate analysis is not within control limits (estimated value)	yes	yes	result
	Organics: outside contract-required QC limits	yes	yes	result
A	Organics: identifies TIC as a suspected aldol condensation product	yes, remove to TIC table	no	not included
B	Inorganics: reported value is less than CRDL but greater than IDL	yes	yes	result
	Organics: warns that analyte also detected in blank[1]	yes	yes	result
	Radionuclides: constituent also detected in associated blank whose concentration was greater than CRDL and/or minimum detectable activity (estimated value)	yes	yes	result
C	Organics: pesticide result confirmed by GC/MS	yes	yes	result
	Radionuclides: presence of high TDS in sample increased minimum detectable activity	yes	yes	result
D	Organics: identified in an analysis at a secondary dilution[1]	yes	yes	result
E	Inorganics: value is an estimate due to interference (estimated value)	yes	yes	result
	Organics: compound exceeded calibration range of instrument, sample must be re-analyzed	no	no	not included
F	Organics: compound off scale (estimated value)	yes	yes	result
	Radionuclides: for alpha spectrometry - FWHM exceeded acceptable limits (estimated value)	yes	yes	result
G	Inorganics: native analyte is greater than 4 times spike added	yes	yes	result
	TOC: dilution result exceeded range of instrument, estimated result	yes	yes	result
H	Radionuclides: sample analysis performed outside of method-specified maximum holding time	yes	yes	result
I	Organics: interference with target peak (estimated value)	yes	yes	result
J	Inorganics: value greater than IDL but control sample analysis not within control limits (estimated value)	yes	yes	result
	Organics: MS data indicate presence of compound but below detection limit (estimated value)[1]	yes	yes	result

Attachment 3
Table 2
Definition of Laboratory Qualifiers

Qualifier	Definition	Include in Data Analysis	Detected ("Hit")	Value for Statistical Analysis
JB	Organics: result below detection limit and analyte detected in laboratory blank[1]	yes	no	½ detection limit
K	Result is less than MDL (CRDL) but greater than IDL	yes	yes	result
L	Undefined	no	no	not included
M	Inorganics: duplication injection precision not met (estimated value)	yes	yes	result
N	Inorganics: spiked sample recovery is not within control limits (estimated value) Organics: compound presumed present (TIC)[1]	yes yes, remove to TIC table	yes no	result not included
R	Validation code for rejected data entered in lab qualifier field/unusable data	no	no	not included
S	Inorganics: the reported value determined by the method of standard additions	yes	yes	result
T	Compound found in TCLP extract blank and sample	yes	yes	result
U	Organics and inorganics: analyte analyzed but not detected at the quantitation limit	yes	no	½ detection limit
UC	Organics: pesticide result confirmed but below detection limit	yes	no	½ detection limit
UE	Radionuclides: detection limit reported as result	no	no	not included
UJ	Organics: analyzed but not above the detection limit (estimated value)	yes	no	½ detection limit
UN	Inorganics: spiked sample recovery not within control limits and sample result below detection limit Organics: compound presumed present but below detection limit	yes yes, remove to TIC table	no no	½ detection limit not included
UW	Inorganics: post-digestion spike for GFAA analysis is out of control limits and sample result is below detection limit	yes	no	½ detection limit
UX		yes	no	½ detection limit
V	Validation code for valid data entered into laboratory qualifier field	yes	yes	result
W	Inorganics: post-digestion spike for GFAA analysis is out of control limits while sample absorbance is less than 50% of spike absorbance	yes	yes	result

Attachment 3
Table 2
Definition of Laboratory Qualifiers

Qualifier	Definition	Include in Data Analysis	Detected ("Hit")	Value for Statistical Analysis
X[2]	Inorganics (pre-1992): detection limit greater than normal, sample matrix interference	yes	yes	result
	Organics (pre-1992): laboratory software flag (combines more than one qualifier) - not defined	no (unless accompanied by a validated result)	no	not included
	Other (OU 11 RFI/RI samples): result by calculation defined in GRRASP	yes	yes	result
Y	Organics: indistinguishable isomer in TIC	yes, remove to TIC table	no	not included
	Radionuclides: chemical yield exceeded acceptable limits (estimated value)	yes	yes	result
Z	Organics: "request identification, matrix interference of column"	no	no	not included

[1] Common laboratory contaminants: 2-butanone, acetone, common phthalate esters, methylene chloride, toluene.
[2] Note on use of X qualifiers: X is defined in the GRRASP as a result determined by calculation not by direct laboratory analysis. Therefore, for samples analyzed during the period that GRRASP has been in effect (since January 1992) the results qualified by an X will be treated as estimated values (similar to J) For historic data, when GRRASP was not used by laboratories, an X qualifier has two definitions. For organics, the X is a flag entered manually by the laboratory, but is not defined in RFEDS. Therefore, organic results qualified by X are not considered usable data, unless a validated result is given. For inorganics, an X qualifier indicates that the detection limit for the analyte is higher than normal due to matrix interference. An inorganic qualified with an X will be treated like a J result. The X qualifier is sometimes also used with other qualifiers (for example, UX, XJ). In these cases the meaning of X depends on the analyte and the date of the analysis.

CRDL	contract-required detection limit
FWHM	full width at half maximum (the width of the distribution at a level that is just half the maximum ordinate of the peak)
GC/MS	gas chromatography/mass spectrometry
GFAA	graphic furnace atomic adsorption
GRRASP	General Radiochemistry and Routine Analytical Services Protocol
IDL	instrument detection limit
MDL	method detection limit
MS	matrix spike
OU	operable unit
QC	quality control
RFEDS	Rocky Flats Environmental Database System
RFI/RI	RCRA Facility Investigation/Remedial Investigation
TCLP	toxicity characteristic leaching procedure
TDS	total dissolved solids
TIC	tentatively identified compound
TOC	total organic carbon

Attachment 4
Sediment and Surface Water Results

Attachment 4
Table 1
Summary of Sediment ECOC Screen
Walnut Creek Watershed — A-Ponds

Analyte	GRP	OU6 PCOC	Exposure Point Concentration	Units	Toxicity Reference Value	Frequency of Hits	Hazard Quotient
			Pond A-1				
Anthracene	S	X	88	µg/kg	0.99	2/5	89
Chrysene	S	X	320	µg/kg	9.3	5/5	34
Benzo(b)fluoranthene	S	X	370	µg/kg	21	3/5	18
Antimony	M	X	29	mg/kg	7.7	2/5	3.8
Magnesium	M	X	4,200	mg/kg	1,800	5/5	2.3
Toluene	V	X	240	µg/kg	110	5/5	2.2
Cobalt	M	X	12	mg/kg	6.9	5/5	1.7
Vanadium	M	X	37	mg/kg	22	5/5	1.7
Aroclor-1254	P	X	350	µg/kg	270	10/10	1.3
Benzo(k)fluoranthene	S	X	200	µg/kg	170	4/5	1.2
						HAZARD INDEX	***160***
			Pond A-3				
Chrysene	S	X	230	µg/kg	7.9	5/5	29.1
Benzo(b)fluoranthene	S	X	330	µg/kg	18	4/5	18.3
Antimony	M	X	23	mg/kg	7.7	1/4	3.0
Magnesium	M	X	5,300	mg/kg	1,800	5/5	2.9
Vanadium	M	X	61	mg/kg	22	5/5	2.8
Cobalt	M	X	15	mg/kg	6.9	5/5	2.2
Zinc	M	X	150	mg/kg	150	5/5	1.0
						HAZARD INDEX	***59***
			Pond A-2				
Chrysene	S	X	71	µg/kg	18	1/5	3.9
Magnesium	M	X	4,200	mg/kg	1,800	5/5	2.3
Aldrin	P	X	35	µg/kg	15.8000	1/5	2.2
Zinc	M	X	280	mg/kg	150	5/5	1.9
Benzoic acid	S	X	330	µg/kg	200	4/5	1.7
Cobalt	M	X	10	mg/kg	6.9	5/5	1.4
Acetone	V	X	260	µg/kg	170	2/5	1.5
Vanadium	M	X	30	mg/kg	22	5/5	1.4
Aroclor-1254	P	X	270	µg/kg	518	4/9	0.5
						HAZARD INDEX	***17***
			Pond A-5				
Benzoic acid	S	X	500	µg/kg	65	4/5	7.7
Acetone	V	X	160	µg/kg	56	1/5	2.9
Cobalt	M	X	12	mg/kg	6.9	5/5	1.7
Magnesium	M	X	3,100	mg/kg	1,800	5/5	1.7
Vanadium	M	X	35	mg/kg	22	5/5	1.6
						HAZARD INDEX	***16***
			Pond A-4				
Antimony	M	X	40	mg/kg	7.7	3/4	5.2
Magnesium	M	X	4,700	mg/kg	1,800	5/5	2.6
Vanadium	M	X	51	mg/kg	22	5/5	2.3
Cobalt	M	X	14	mg/kg	6.9	5/5	2.0
Zinc	M	X	140	mg/kg	150	5/5	0.9
						HAZARD INDEX	***13***

TRVs were developed only for sediment PCOCs (pond-specific). PCOCs with all records less than the TRV were not shown above. Therefore, records shown include only pond-specific PCOCs with individual samples' HQ greater than 1.0.

Hazard quotients and hazard indices were rounded to present only two significant figures.

Attachment 4
Table 2
Summary of Sediment ECOC Screen
Walnut Creek Watershed — B-Ponds

Analyte	GRP	OU6 PCOC	Exposure Point Concentration	Units	Toxicity Reference Value	Frequency of Hits	Hazard Quotient
			Pond B-1				
Fluorene	S	X	460	µg/kg	0.32	2/7	1,438
Anthracene	S	X	460	µg/kg	1.7	3/7	271
Chrysene	S	X	1,500	µg/kg	16	6/7	94
Silver	M	X	240	mg/kg	2.7	7/7	89
Benzo(b)fluoranthene	S	X	2,100	µg/kg	35	5/7	60
Heptachlor	P	X	19	µg/kg	1.480	1/7	13
Aroclor-1254	P	X	4,100	µg/kg	460	10/12	8.9
Zinc	M	X	730	mg/kg	150	7/7	4.9
Methylene chloride	V	X	9.0	µg/kg	2.1	1/5	4.3
Benzo(k)fluoranthene	S	X	780	µg/kg	280	5/7	2.8
Copper	M	X	89	mg/kg	34	7/7	2.6
Acetone	V	X	330	µg/kg	150	4/5	2.2
Magnesium	M	X	3,600	mg/kg	1,800	7/7	2.0
Cobalt	M	X	11	mg/kg	6.9	7/7	1.6
Dibenzo(a,h)anthracen	S	X	150	µg/kg	110	1/7	1.4
Vanadium	M	X	30	mg/kg	22	7/7	1.4
Chromium	M	X	65	mg/kg	81	7/7	0.8
						HAZARD INDEX	***2,000***
			Pond B-4				
Anthracene	S	X	100	µg/kg	0.95	5/8	105
Chrysene	S	X	560	µg/kg	8.9	8/8	63
Benzo(b)fluoranthene	S	X	1,000	µg/kg	20	8/8	50
Silver	M	X	40	mg/kg	2.7	3/8	15
Antimony	M	X	26	mg/kg	7.7	2/4	3.4
gamma-BHC(Lindane)	P	X	13	µg/kg	4.7	1/7	2.8
Magnesium	M	X	4,100	mg/kg	1,800	8/8	2.3
Benzo(k)fluoranthene	S	X	330	µg/kg	160	8/8	2.1
Vanadium	M	X	39	mg/kg	22	8/8	1.8
Aroclor-1254	P	X	430	µg/kg	258	10/13	1.7
Zinc	M	X	250	mg/kg	150	8/8	1.7
Cobalt	M	X	10	mg/kg	6.9	8/8	1.4
Copper	M	X	32	mg/kg	34	8/8	0.9
						HAZARD INDEX	***250***

Attachment 4
Table 2
Summary of Sediment ECOC Screen
Walnut Creek Watershed — B-Ponds

Analyte	GRP	OU6 PCOC	Exposure Point Concentration	Units	Toxicity Reference Value	Frequency of Hits	Hazard Quotient
Pond B-3							
Silver	M	X	170	mg/kg	2.7	7/7	63
Chrysene	S	X	380	µg/kg	12	2/7	32
Benzo(b)fluoranthene	S	X	500	µg/kg	28	5/7	18
Antimony	M	X	69	mg/kg	7.7	2/3	9.0
Aroclor-1254	P	X	1,400	µg/kg	361	10/12	3.9
Copper	M	X	65	mg/kg	34	7/7	1.9
Magnesium	M	X	3,300	mg/kg	1,800	7/7	1.8
Zinc	M	X	240	mg/kg	150	7/7	1.6
Cobalt	M	X	11	mg/kg	6.9	7/7	1.6
Vanadium	M	X	31	mg/kg	22	7/7	1.4
Aroclor-1260	P	X	400	µg/kg	2,646.5	3/10	0.2
						HAZARD INDEX	***130***
Pond B-2							
Silver	M	X	140	mg/kg	2.7	3/3	52
Chrysene	S	X	200	µg/kg	26	2/4	7.7
Aroclor-1254	P	X	3,300	µg/kg	757	9/10	4.4
Magnesium	M	X	5,700	mg/kg	1,800	4/4	3.2
Acetone	V	X	750	µg/kg	240	3/4	3.1
Cobalt	M	X	12	mg/kg	6.9	4/4	1.7
Manganese	M	X	540	mg/kg	460	4/4	1.2
Vanadium	M	X	24	mg/kg	22	3/3	1.1
						HAZARD INDEX	***74***
Pond B-5							
Magnesium	M	X	4,500	mg/kg	1,800	5/5	2.5
Vanadium	M	X	47	mg/kg	22	5/5	2.1
Cobalt	M	X	11	mg/kg	6.9	5/5	1.6
Zinc	M	X	140	mg/kg	150	5/5	0.9
Acetone	V	X	59	µg/kg	65	1/5	0.9
						HAZARD INDEX	***8.1***

TRVs were developed only for sediment PCOCs (pond-specific). PCOCs with all records less than the TRV were not shown above. Therefore, records shown include only pond-specific PCOCs with individual samples' HQ greater than 1.0.
Hazard quotients and hazard indices were rounded to present only two significant figures.

Attachment 4
Table 3
Summary of Sediment ECOC Screen
Walnut Creek

Analyte	GRP	PCOC?	Exposure Point Concentration	Units	Toxicity Reference Value	Frequency of Hits	Hazard Quotient
South Walnut Creek							
Anthracene	S	X	110	µg/kg	0.80	1/12	138
Chrysene	S	X	290	µg/kg	7.5	4/12	39
Benzo(b)fluoranthene	S	X	320	µg/kg	17	3/12	19
Methylene chloride	V	X	17	µg/kg	0.98	4/13	17
Zinc	M	X	270	mg/kg	150	12/12	1.8
Benzo(k)fluoranthene	S	X	190	µg/kg	130	3/12	1.5
Magnesium	M	X	2,400	mg/kg	1,800	12/12	1.3
Benzoic acid	S	X	110	µg/kg	83	1/11	1.3
Vanadium	M	X	28	mg/kg	22	12/12	1.3
Barium	M	X	110	mg/kg	90	12/12	1.2
Strontium	M	X	63	mg/kg	50	12/12	1.3
Cobalt	M	X	6.8	mg/kg	6.9	12/12	1.0
Acetone	V	X	62	µg/kg	70	3/13	0.9
Arsenic	M	X	5.0	mg/kg	8.2	12/12	0.6
Manganese	M	X	280	mg/kg	460	12/12	0.6
						HAZARD INDEX	***230***
North Walnut Creek							
Anthracene	S	X	65	µg/kg	0.61	1/11	107
Chrysene	S	X	180	µg/kg	5.7	3/11	32
Benzo(b)fluoranthene	S	X	200	µg/kg	13	2/11	15
Methylene chloride	V	X	7.0	µg/kg	0.74	1/10	9.5
Benzoic acid	S	X	510	µg/kg	62	4/11	8.2
Magnesium	M	X	2,900	mg/kg	1,800	11/11	1.6
Barium	M	X	130	mg/kg	90	11/11	1.4
Cobalt	M	X	9.8	mg/kg	6.9	11/11	1.4
Vanadium	M	X	27	mg/kg	22	11/11	1.2
Manganese	M	X	530	mg/kg	460	11/11	1.2
Strontium	M	X	56	mg/kg	50	11/11	1.1
Acetone	V	X	51	µg/kg	53	1/10	1.0
Zinc	M	X	96	mg/kg	150	11/11	0.6
						HAZARD INDEX	***180***

TRVs were developed only for sediment PCOCs (pond-specific). PCOCs with all records less than the TRV were not shown above. Therefore, records shown include only pond-specific PCOCs with individual samples' HQ greater than 1.0.

Hazard quotients and hazard indices were rounded to present only two significant figures.

Attachment 4
Table 4
Summary of Sediment ECOC Screen
Woman Creek

Analyte	GRP	OU5 PCOC	Exposure Point Concentration	Units	Toxicity Reference Value	Frequency of Hits	Hazard Quotient
			Pond C-2				
Benzoic acid	S	X	240	µg/kg	140	1/2	1.7
Zinc	M	X	200	mg/kg	150	3/3	1.3
						HAZARD INDEX	***3.0***
			Pond C-1				
Benzoic acid	S	X	490	µg/kg	190	3/3	2.6
						HAZARD INDEX	***2.6***
			Woman Creek				
Zinc	M	X	120	mg/kg	150	45/45	0.8
Copper	M	X	15	mg/kg	34	39/45	0.4
						HAZARD INDEX	***1.2***

TRVs were developed only for sediment PCOCs (pond-specific). PCOCs with all records less than the TRV were not shown above. Therefore, records shown include only pond-specific PCOCs with individual samples' HQ greater than 1.0.
Hazard quotients and hazard indices were rounded to present only two significant figures.

Attachment 4
Table 5
Summary of Surface Water PCOCs Exceeding Water Quality Standards

Sitewide PCOCs	OU2 PCOC	Exposure Point Concentration	Water Quality Standards	Units	Detection Frequency	Hazard Quotient
Walnut Creek Watershed						
		OU7 Downgradient Areas				
Barium	X	170	3.8	µg/L	17/23	45
Manganese	X	120	50	µg/L	11/21	2.4
Strontium	X	910	620	µg/L	20/25	1.5
					HAZARD INDEX	***49***
		OU2 903 Pad				
Barium		150	3.8	µg/L	26/32	39
Manganese		180	50	µg/L	30/32	3.6
Strontium		960	620	µg/L	29/32	1.5
Antimony		22	30	µg/L	7/31	0.73
Tin		46	74	µg/L	7/30	0.62
1,2-Dichloroethene		11	31	µg/L	9/31	0.35
					HAZARD INDEX	***46***
		OU6 A-Ponds				
Barium		57	3.8	µg/L	25/25	15
Manganese		68	50	µg/L	25/25	1.4
					HAZARD INDEX	***15***
		OU6 B-Ponds				
Barium		49	3.8	µg/L	26/26	13
Manganese		77	50	µg/L	26/26	1.5
					HAZARD INDEX	***15***
Woman Creek Watershed						
		OU2 903 Pad				
Barium		150	3.8	µg/L	26/32	39
Manganese		180	50	µg/L	30/32	3.6
Strontium		960	620	µg/L	29/32	1.5
Antimony		22	30	µg/L	7/31	0.73
Tin		46	74	µg/L	7/30	0.62
1,2-Dichloroethene		11	31	µg/L	9/31	0.35
					HAZARD INDEX	***46***
		OU5 Old Landfill				
Barium	X	140	3.8	µg/L	30/35	37
Antimony		18	30	µg/L	7/34	0.60
Tin		30	74	µg/L	7/34	0.41
Manganese		19	50	µg/L	26/34	0.38
					HAZARD INDEX	***38***
		OU1 881 Hillside				
Barium		100	3.8	µg/L	141/187	26
Strontium		1,000	620	µg/L	149/184	1.6
Antimony		15	30	µg/L	34/181	0.50
Vanadium		8.1	19	µg/L	50/181	0.43
Manganese		19	50	µg/L	147/184	0.38
					HAZARD INDEX	***29***

Attachment 4
Table 5
Summary of Surface Water PCOCs Exceeding Water Quality Standards

Sitewide PCOCs	OU2 PCOC	Exposure Point Concentration	Water Quality Standards	Units	Detection Frequency	Hazard Quotient
			OU5 C-Ponds			
Barium	X	93	3.8	µg/L	48/60	24
Manganese		59	50	µg/L	53/60	1.2
Antimony		20	30	µg/L	14/59	0.67
Vanadium		9.9	19	µg/L	15/59	0.52
					HAZARD INDEX	***26***
			OU5 Ash Pits			
Barium	X	65	3.8	µg/L	30/39	17
Manganese		44	50	µg/L	29/39	0.88
					HAZARD INDEX	***18***

Analytes shown above are only those with any individual record exceeding the surface water standard.
UCL_{95} - 95% upper confidence limit of the true mean (based on a 1-tailed test)
Hazard quotients and hazard indices were rounded to present only two significant figures.

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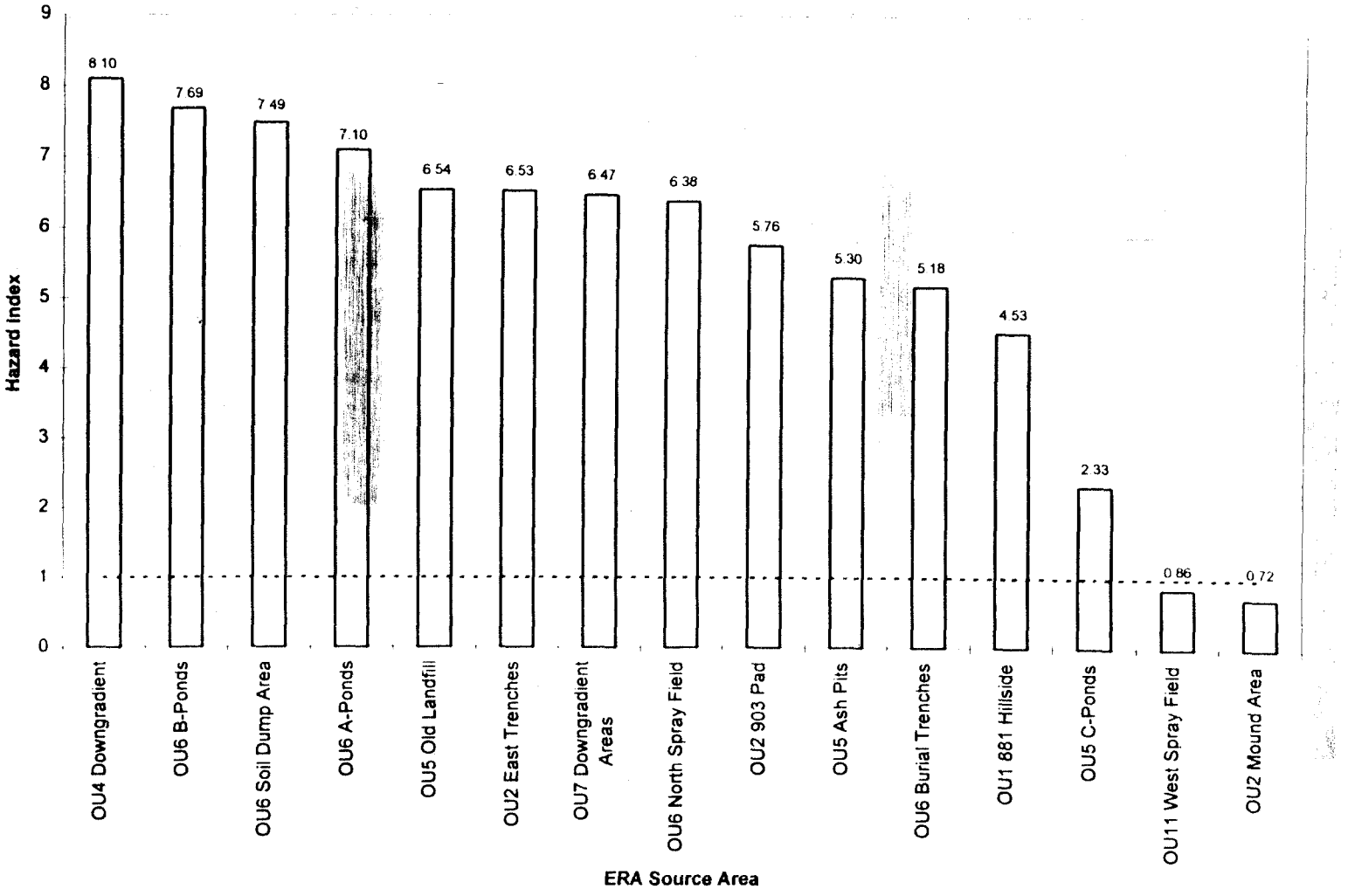
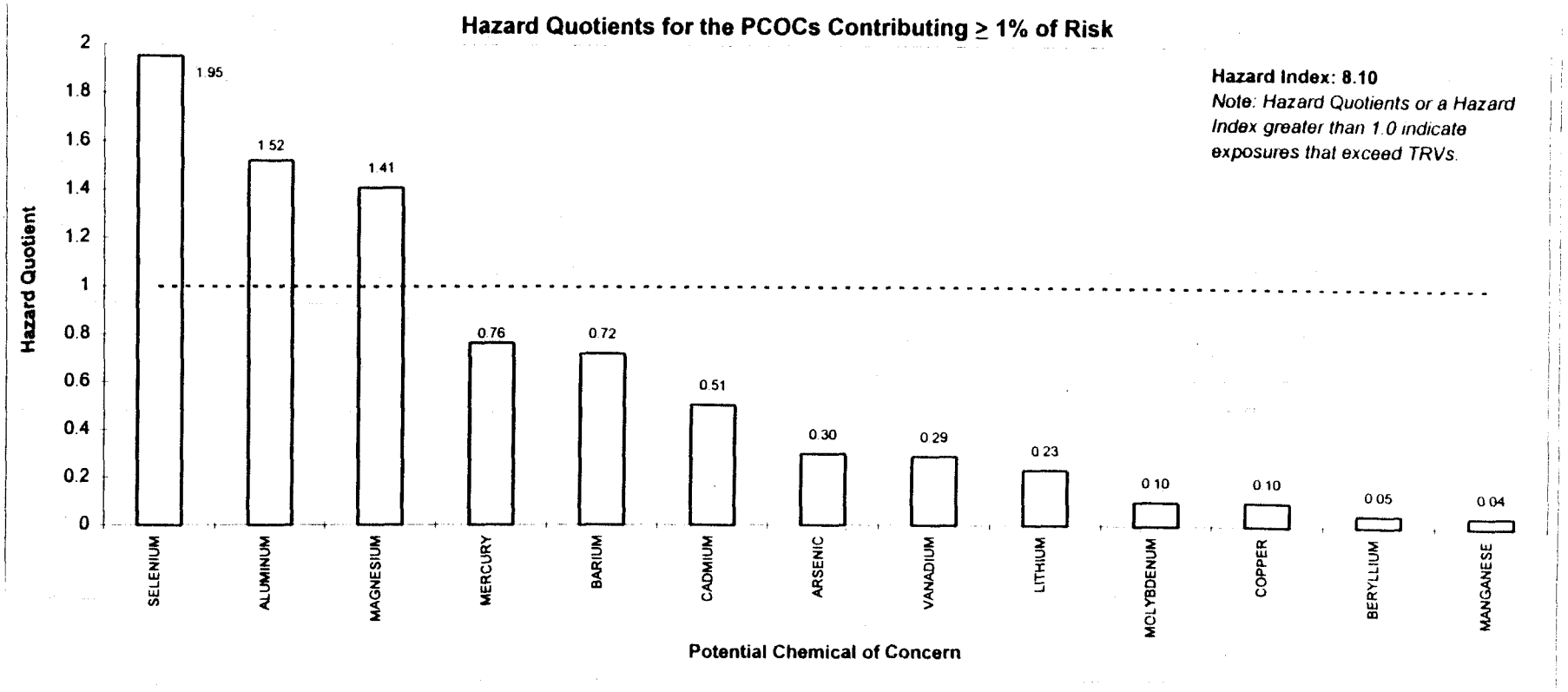
Attachment 5
Wildlife Results

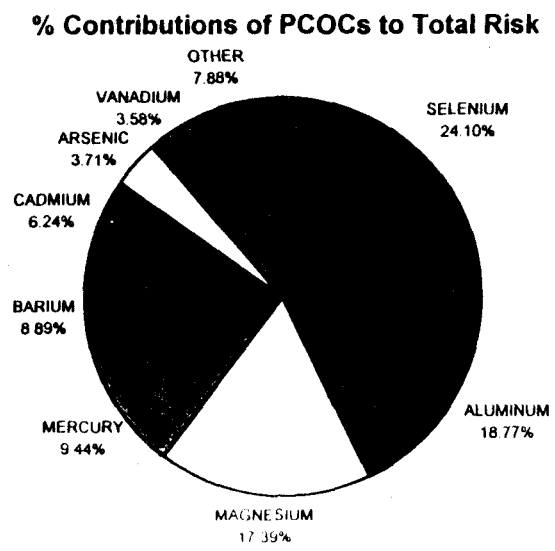
Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice

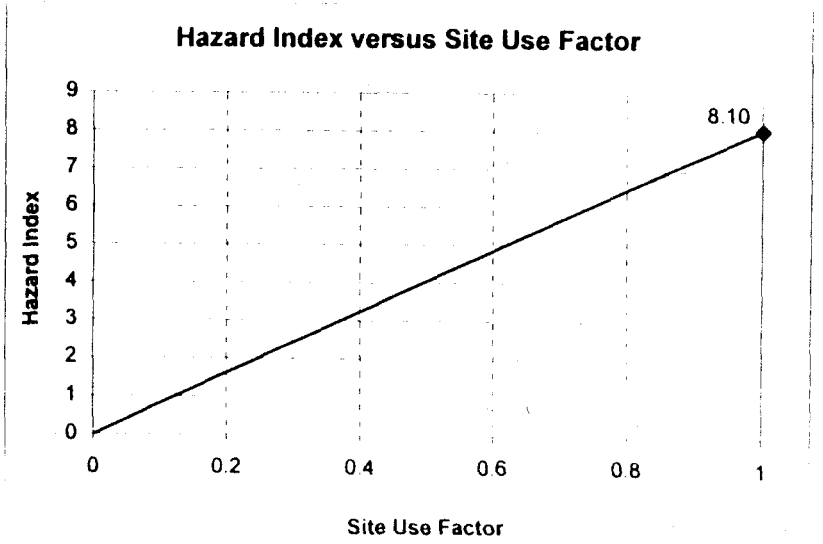
Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice at RFETS



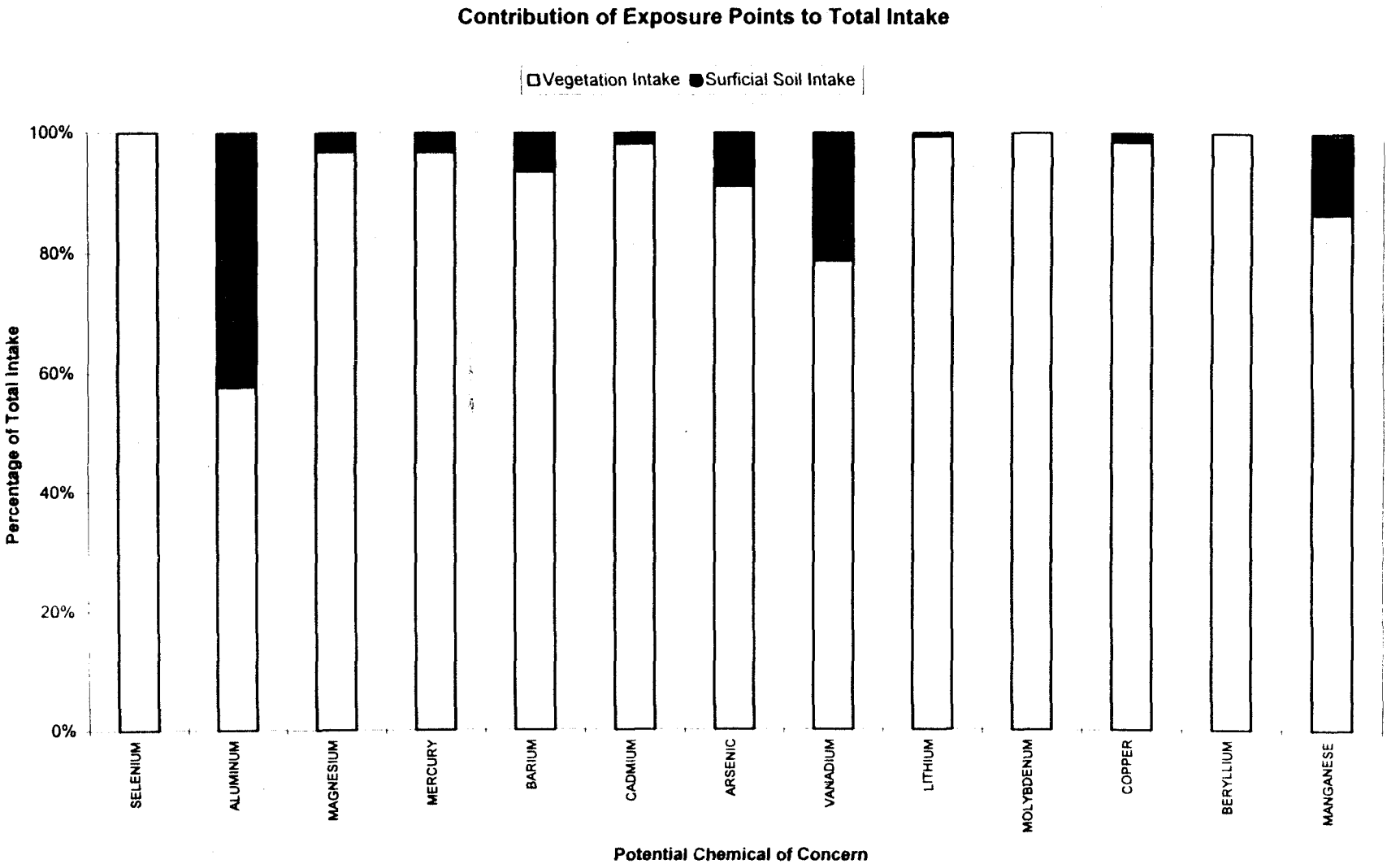
Summary of Ecotoxicological Risk to Preble's Meadow Ju...ping Mice in the OU4 Downgradient Source Area at RFETS







Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU4 Downgradient Source Area at RFETS



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU4 Downgradient Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU4 DOWNGRADIENT		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU4	IR = NR SUF = 1		IR = 0.170 SUF = 1			IR = 0.004 SUF = 1		IR = I SUF = I		IR = I SUF = I					
SELENIUM		NR	—	3.643		0.619	ND	—	NR	—	NR	—	0.619	0.317	1.95	24.10%
ALUMINUM		NR	—	413.229		70.249	12856.399	51.426	NR	—	NR	—	121.674	80.009	1.52	18.77%
MAGNESIUM		NR	—	2057.159		349.717	2871.518	11.486	NR	—	NR	—	361.203	256.400	1.41	17.39%
MERCURY	X	NR	—	0.075		0.013	0.107	4.27E-04	NR	—	NR	—	0.013	0.017	0.76	9.44%
BARIUM		NR	—	56.333		9.577	165.692	0.663	NR	—	NR	—	10.239	14.217	0.72	8.89%
CADMIUM	X	NR	—	1.400		0.238	1.109	0.004	NR	—	NR	—	0.242	0.479	0.51	6.24%
ARSENIC		NR	—	1.100		0.187	4.565	0.018	NR	—	NR	—	0.205	0.682	0.30	3.71%
VANADIUM		NR	—	3.100		0.527	35.665	0.143	NR	—	NR	—	0.670	2.313	0.29	3.58%
LITHIUM		NR	—	33.600		5.712	9.207	0.037	NR	—	NR	—	5.749	24.571	0.23	2.89%
MOLYBDENUM		NR	—	7.200		1.224	ND	—	NR	—	NR	—	1.224	12.061	0.10	1.25%
COPPER		NR	—	25.140		4.274	16.143	0.065	NR	—	NR	—	4.338	43.327	0.10	1.24%
BERYLLIUM	X	NR	—	0.500		0.085	ND	—	NR	—	NR	—	0.085	1.727	0.05	0.61%
MANGANESE		NR	—	51.289		8.719	337.070	1.348	NR	—	NR	—	10.067	230.264	0.04	0.54%
TIN		NR	—	8.500		1.445	38.477	0.154	NR	—	NR	—	1.599	65.961	0.02	0.30%
STRONTIUM		NR	—	78.059		13.270	52.509	0.210	NR	—	NR	—	13.480	688.177	0.02	0.24%
ZINC		NR	—	42.863		7.287	74.594	0.298	NR	—	NR	—	7.585	418.663	0.02	0.22%
LEAD		NR	—	1.745		0.297	20.053	0.080	NR	—	NR	—	0.377	20.933	0.02	0.22%
NICKEL		NR	—	6.800		1.156	14.767	0.059	NR	—	NR	—	1.215	104.666	0.01	0.14%
ACETONE		NR	—	NR	1.085	0.184	NR	—	NR	—	NR	—	0.184	26.167	0.01	0.09%
THALLIUM		NR	—	ND		—	0.630	0.003	NR	—	NR	—	0.003	0.697	<0.01	0.05%
COBALT		NR	—	ND		—	8.238	0.033	NR	—	NR	—	0.033	13.192	<0.01	0.03%
TOLUENE		NR	—	NR	0.232	0.040	NR	—	NR	—	NR	—	0.040	30.220	<0.01	0.02%
BENZO(a)PYRENE	X	NR	—	NR	NR	—	0.200	0.001	NR	—	NR	—	0.001	1.163	<0.01	<0.01%
METHYLENE CHLORIDE		NR	—	NR	0.078	0.013	NR	—	NR	—	NR	—	0.013	15.307	<0.01	0.01%
NITRATE/NITRITE	X	NR	—	NR		—	3.975	0.016	NR	—	NR	—	0.016	34.669	<0.01	<0.01%
BIS(2-ETHYLHEXYL)PHTHALAT	X	NR	—	NR	NR	—	0.978	0.004	NR	—	NR	—	0.004	21.321	<0.01	<0.01%
DIBENZO(a,h)ANTHRACENE		NR	—	NR	NR	—	0.047	1.88E-04	NR	—	NR	—	1.88E-04	1.163	<0.01	<0.01%
BENZO(b)FLUORANTHENE	X	NR	—	NR	NR	—	0.182	0.001	NR	—	NR	—	0.001	11.634	<0.01	<0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	NR	—	0.160	0.001	NR	—	NR	—	0.001	11.634	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	NR	—	0.150	0.001	NR	—	NR	—	0.001	11.634	<0.01	<0.01%
BENZO(k)FLUORANTHENE	X	NR	—	NR	NR	—	0.130	0.001	NR	—	NR	—	0.001	11.634	<0.01	<0.01%
CHROMIUM		NR	—	1.400		0.238	14.049	0.056	NR	—	NR	—	0.294	7161.754	<0.01	<0.01%
TETRACHLOROETHENE		NR	—	NR	0.002	2.97E-04	NR	—	NR	—	NR	—	2.97E-04	16.300	<0.01	<0.01%
PYRENE	X	NR	—	NR	NR	—	0.191	0.001	NR	—	NR	—	0.001	87.321	<0.01	<0.01%
BUTYL BENZYL PHTHALATE		NR	—	NR	NR	—	0.170	0.001	NR	—	NR	—	0.001	93.349	<0.01	<0.01%
CHRYSENE	X	NR	—	NR	NR	—	0.220	0.001	NR	—	NR	—	0.001	116.343	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	—	NR	NR	—	0.170	0.001	NR	—	NR	—	0.001	116.343	<0.01	<0.01%
FLUORANTHENE	X	NR	—	NR	NR	—	0.183	0.001	NR	—	NR	—	0.001	145.535	<0.01	<0.01%

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU4 Downgradient Source Area at RFETS

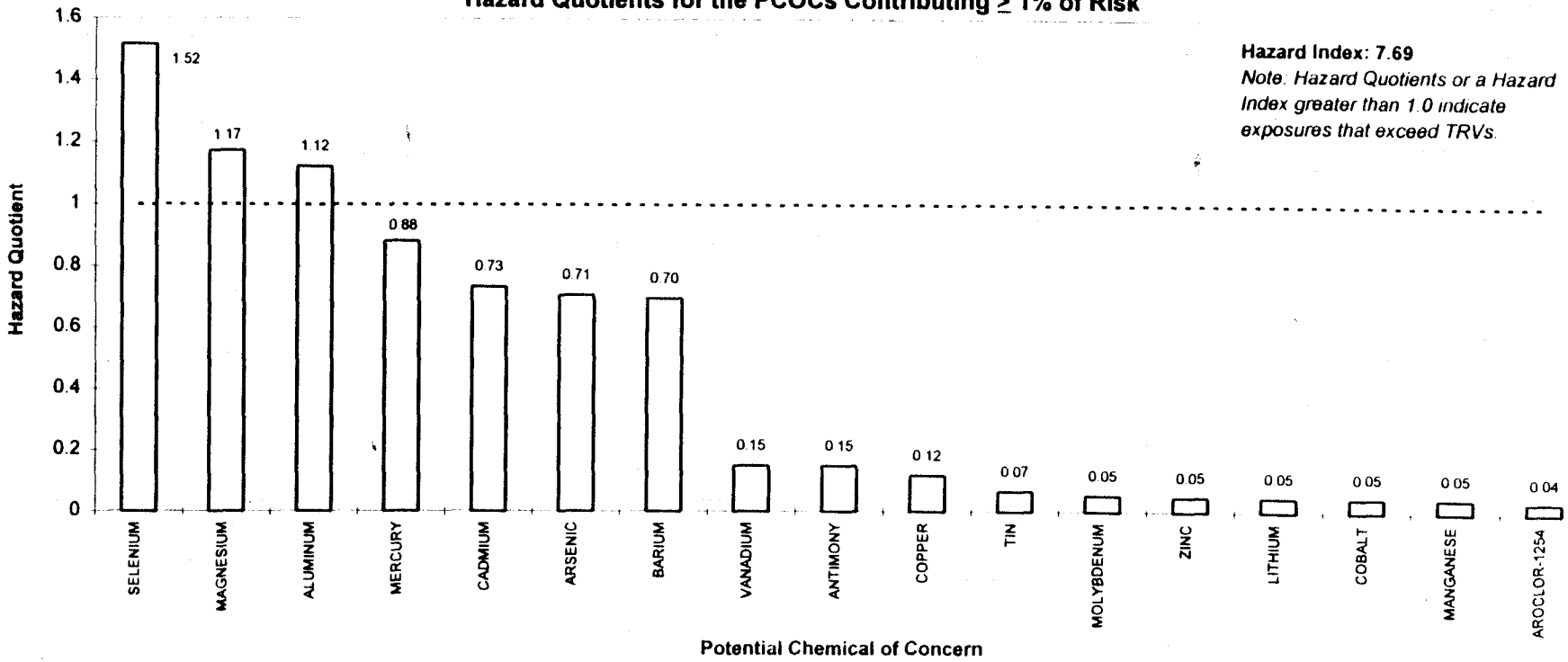
PREBLE'S MEADOW JUMPING MICE OU4 DOWNGRADIENT		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU4	IR = NR SUF = 1		IR = 0.170 SUF = 1			IR = 0.004 SUF = 1		IR = I SUF = I		IR = I SUF = I					
DI-n-BUTYL PHTHALATE	X	NR	—	NR	NR	—	0.079	3.16E-04	NR	—	NR	—	3.16E-04	329.807	<0.01	<0.01%
DI-n-OCTYL PHTHALATE		NR	—	NR	NR	—	0.295	0.001	NR	—	NR	—	0.001	1217.647	<0.01	<0.01%
PHENANTHRENE	X	NR	—	NR	NR	—	0.074	2.96E-04	NR	—	NR	—	2.96E-04	1163.433	<0.01	<0.01%
													HAZARD INDEX		8.10	

Notes:

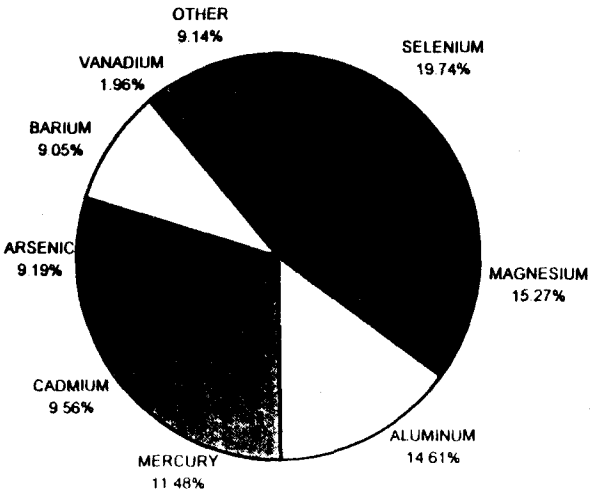
RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU6 B-Ponds Source Area at RFETS

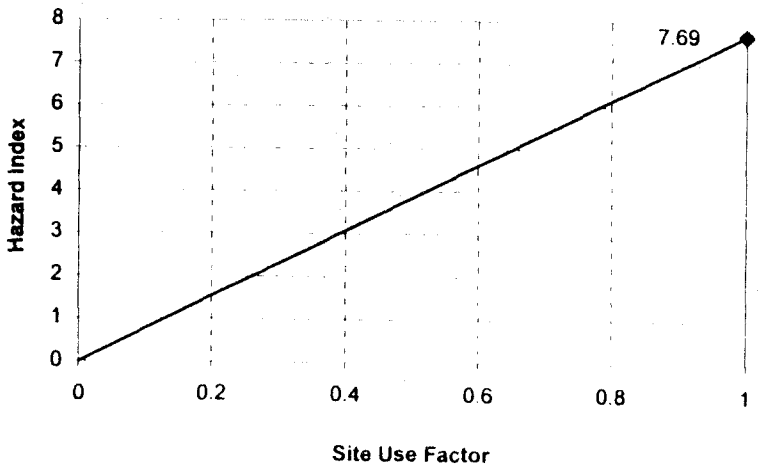
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



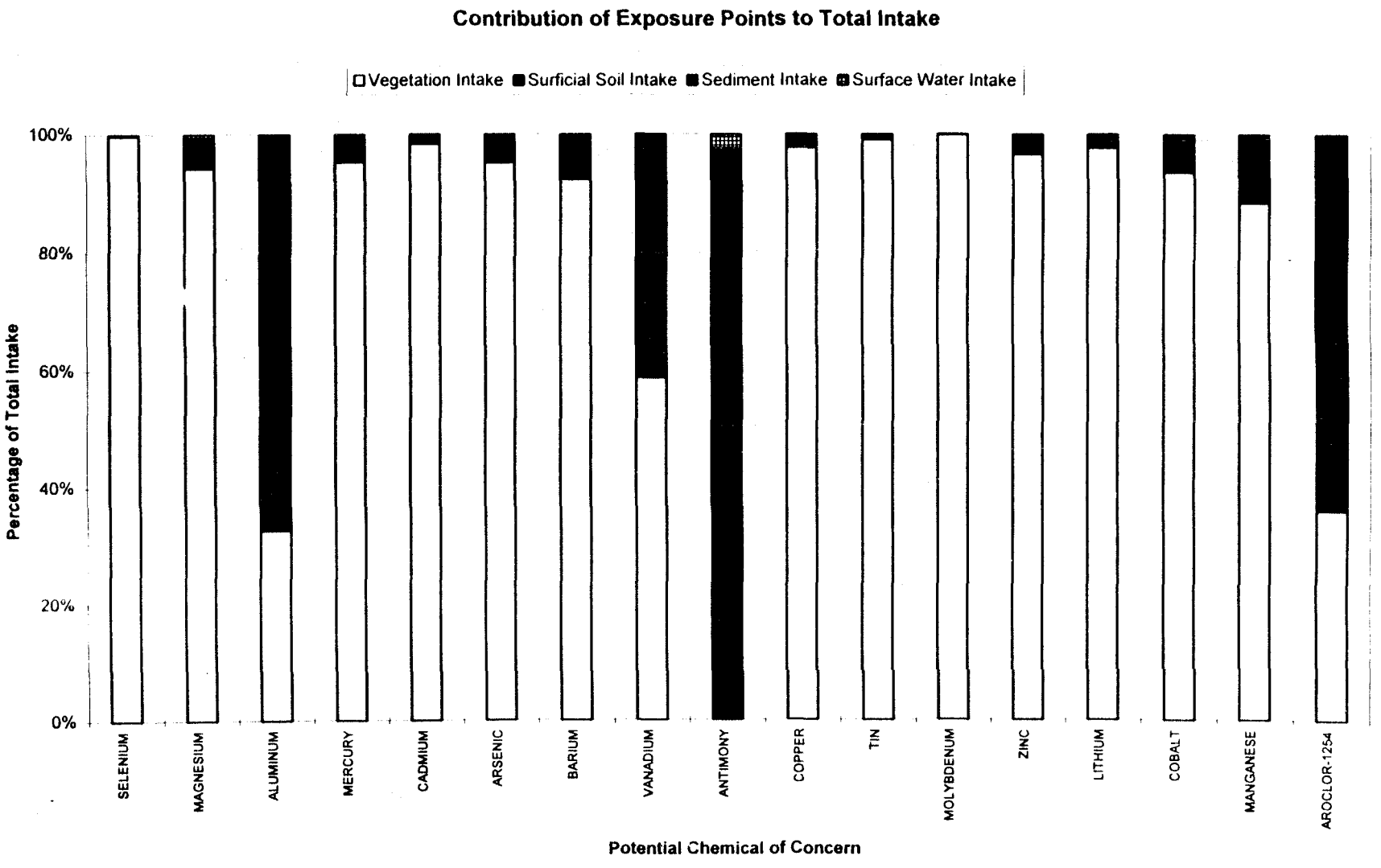
% Contributions of PCOCs to Total Risk



Hazard Index versus Site Use Factor



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU6 B-Ponds Source Area at RFETS



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU6 B-Ponds Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU6 B-PONDS		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment[1]		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU6	IR = NR SUF = 1		IR = 0.170 SUF = 1			IR = 0.002 SUF = 1		IR = 0.002 SUF = 1		IR = 0.150 SUF = 1					
SELENIUM		NR	—	2.818		0.479	ND	—	0.591	0.001	0.002	3.03E-04	0.481	0.317	1.52	19.74%
MAGNESIUM	X	NR	—	1669.753		283.858	3790.000	7.580	3643.654	7.287	15.504	2.326	301.051	256.400	1.17	15.27%
ALUMINUM		NR	—	172.535		29.331	18700.000	37.400	11556.246	23.112	0.264	0.040	89.883	80.009	1.12	14.61%
MERCURY	X	NR	—	0.086		0.015	ND	—	0.340	0.001	2.75E-04	4.13E-05	0.015	0.017	0.88	11.48%
CADMIUM		NR	—	2.034		0.346	ND	—	2.888	0.006	0.001	1.48E-04	0.352	0.479	0.73	9.56%
ARSENIC	X	NR	—	2.700		0.459	5.100	0.010	6.286	0.013	0.002	3.38E-04	0.482	0.682	0.71	9.19%
BARIUM	X	NR	—	53.768		9.141	194.000	0.388	178.739	0.357	0.051	0.008	9.894	14.217	0.70	9.05%
VANADIUM	X	NR	—	1.200		0.204	38.900	0.078	32.781	0.066	0.003	4.28E-04	0.348	2.313	0.15	1.96%
ANTIMONY	X	NR	—	ND		—	ND	—	25.419	0.051	0.009	0.001	0.052	0.346	0.15	1.95%
COPPER	X	NR	—	29.452		5.007	17.000	0.034	42.045	0.084	ND	—	5.125	43.327	0.12	1.54%
TIN		NR	—	25.800		4.386	ND	—	21.229	0.042	0.006	0.001	4.429	65.961	0.07	0.87%
MOLYBDENUM	X	NR	—	3.800		0.646	ND	—	ND	—	0.007	0.001	0.647	12.061	0.05	0.70%
ZINC	X	NR	—	116.031		19.725	64.100	0.128	279.259	0.559	0.026	0.004	20.416	418.663	0.05	0.63%
LITHIUM		NR	—	6.600		1.122	5.900	0.012	6.200	0.012	0.017	0.003	1.149	24.571	0.05	0.61%
COBALT	X	NR	—	3.300		0.561	9.000	0.018	10.133	0.020	0.002	2.37E-04	0.600	13.192	0.05	0.59%
MANGANESE	X	NR	—	53.948		9.171	321.000	0.642	272.520	0.545	0.098	0.015	10.373	230.264	0.05	0.59%
AROCLOR-1254	X	NR	—	0.010		0.002	ND	—	1.543	0.003	NR	—	0.005	0.142	0.04	0.46%
NICKEL	X	NR	—	13.890		2.361	14.600	0.029	19.763	0.040	0.004	0.001	2.431	104.666	0.02	0.30%
LEAD	X	NR	—	1.274		0.217	37.200	0.074	54.428	0.109	0.005	0.001	0.401	20.933	0.02	0.25%
STRONTIUM	X	NR	—	66.453		11.297	25.500	0.051	101.256	0.203	0.255	0.038	11.589	688.177	0.02	0.22%
SILVER	X	NR	—	4.700		0.799	ND	—	92.067	0.184	ND	—	0.983	58.626	0.02	0.22%
AROCLOR-1248		NR	—	ND		—	ND	—	0.165	3.30E-04	NR	—	3.30E-04	0.064	0.01	0.07%
BERYLLIUM		NR	—	ND		—	0.970	0.002	2.933	0.006	1.79E-04	2.69E-05	0.008	1.727	<0.01	0.06%
THALLIUM		NR	—	ND		—	0.230	4.60E-04	0.790	0.002	ND	—	0.002	0.697	<0.01	0.04%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	NR	—	ND	—	12.825	0.026	ND	—	0.026	21.321	<0.01	0.02%
BENZO(a)PYRENE	X	NR	—	NR	NR	—	ND	—	0.398	0.001	ND	—	0.001	1.163	<0.01	0.01%
DIBENZO(a,h)ANTHRACENE	X	NR	—	NR	NR	—	ND	—	0.150	3.00E-04	ND	—	3.00E-04	1.163	<0.01	<0.01%
BENZO(b)FLUORANTHENE	X	NR	—	NR	NR	—	ND	—	0.854	0.002	ND	—	0.002	11.634	<0.01	<0.01%
CHROMIUM	X	NR	—	5.293		0.900	19.900	0.040	26.369	0.053	0.002	3.32E-04	0.993	7161.754	<0.01	<0.01%
TOLUENE	X	NR	—	NR	0.020	0.003	NR	—	0.278	0.001	ND	—	0.004	30.220	<0.01	<0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	NR	—	ND	—	0.429	0.001	ND	—	0.001	11.634	<0.01	<0.01%
BENZO(k)FLUORANTHENE	X	NR	—	NR	NR	—	ND	—	0.411	0.001	ND	—	0.001	11.634	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	NR	—	ND	—	0.350	0.001	ND	—	0.001	11.634	<0.01	<0.01%
ACETONE	X	NR	—	NR	ND	—	NR	—	0.190	3.80E-04	0.011	0.002	0.002	26.167	<0.01	<0.01%
TETRACHLOROETHENE	X	NR	—	NR	ND	—	NR	—	ND	—	0.004	0.001	0.001	16.300	<0.01	<0.01%
PYRENE	X	NR	—	NR	NR	—	ND	—	0.951	0.002	ND	—	0.002	87.321	<0.01	<0.01%
AROCLOR-1260	X	NR	—	ND		—	ND	—	0.166	3.32E-04	NR	—	3.32E-04	18.205	<0.01	<0.01%
FLUORANTHENE	X	NR	—	NR	NR	—	ND	—	1.128	0.002	ND	—	0.002	145.535	<0.01	<0.01%
gamma-BHC (LINDANE)	X	NR	—	NR	NR	—	ND	—	0.006	1.15E-05	NR	—	1.15E-05	0.871	<0.01	<0.01%
CHRYSENE	X	NR	—	NR	NR	—	ND	—	0.614	0.001	ND	—	0.001	116.343	<0.01	<0.01%

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU6 B-Ponds Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU6 B-PONDS		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment[1]		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU6	IR = NR SUF = 1		IR = 0.170 SUF = 1			IR = 0.002 SUF = 1		IR = 0.002 SUF = 1		IR = 0.160 SUF = 1					
BENZO(ghi)PERYLENE	X	NR	—	NR	NR	—	ND	—	0.270	0.001	ND	—	0.001	116.343	<0.01	<0.01%
CHLOROFORM	X	NR	—	NR	ND	—	NR	—	ND	—	0.002	3.00E-04	3.00E-04	39.250	<0.01	<0.01%
1,2-DICHLOROETHENE	X	NR	—	NR	ND	—	NR	—	ND	—	0.003	3.79E-04	3.79E-04	52.625	<0.01	<0.01%
FLUORENE	X	NR	—	NR	NR	—	ND	—	0.351	0.001	ND	—	0.001	145.535	<0.01	<0.01%
1,2,4-TRICHLOROBENZENE	X	NR	—	NR	NR	—	ND	—	0.130	2.60E-04	ND	—	2.60E-04	39.049	<0.01	<0.01%
HEPTACHLOR	X	NR	—	NR	NR	—	ND	—	0.007	1.35E-05	NR	—	1.35E-05	2.094	<0.01	<0.01%
PHENOL	X	NR	—	NR	NR	—	ND	—	0.290	0.001	ND	—	0.001	158.307	<0.01	<0.01%
TRICHLOROETHENE	X	NR	—	NR	ND	—	NR	—	ND	—	0.003	4.31E-04	4.31E-04	171.044	<0.01	<0.01%
1,2-DICHLOROETHANE	X	NR	—	NR	ND	—	NR	—	ND	—	0.001	1.50E-04	1.50E-04	61.195	<0.01	<0.01%
BUTYL BENZYL PHTHALATE	X	NR	—	NR	NR	—	ND	—	0.110	2.20E-04	ND	—	2.20E-04	93.349	<0.01	<0.01%
METHYLENE CHLORIDE	X	NR	—	NR	ND	—	NR	—	0.009	1.80E-05	ND	—	1.80E-05	15.307	<0.01	<0.01%
PHENANTHRENE	X	NR	—	NR	NR	—	ND	—	0.744	0.001	ND	—	0.001	1163.433	<0.01	<0.01%
NAPHTHALENE	X	NR	—	NR	NR	—	ND	—	0.351	0.001	ND	—	0.001	1163.433	<0.01	<0.01%
ACENAPHTHENE	X	NR	—	NR	NR	—	ND	—	0.341	0.001	ND	—	0.001	1163.433	<0.01	<0.01%
ANTHRACENE	X	NR	—	NR	NR	—	ND	—	0.326	0.001	ND	—	0.001	1164.277	<0.01	<0.01%
DI-n-OCTYL PHTHALATE	X	NR	—	NR	NR	—	ND	—	0.250	0.001	ND	—	0.001	1217.647	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	NR	—	ND	—	ND	—	0.001	1.50E-04	1.50E-04	329.807	<0.01	<0.01%
2-METHYLNAPHTHALENE	X	NR	—	NR	NR	—	ND	—	0.170	3.40E-04	ND	—	3.40E-04	1163.433	<0.01	<0.01%
2-BUTANONE	X	NR	—	NR	ND	—	NR	—	0.029	5.83E-05	ND	—	5.83E-05	4672.704	<0.01	<0.01%

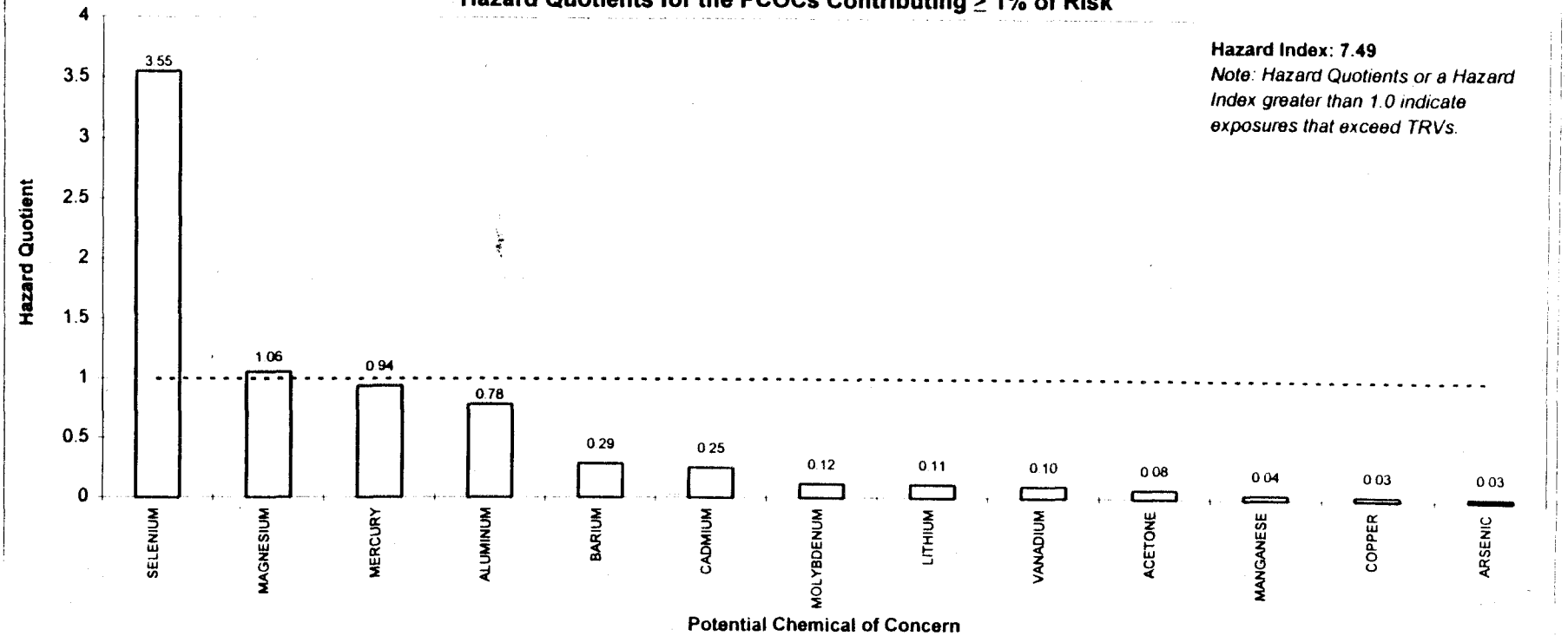
[1] Because Preble's meadow jumping mice have been captured in sediments in this source area, exposure from dry sediment intake is estimated.

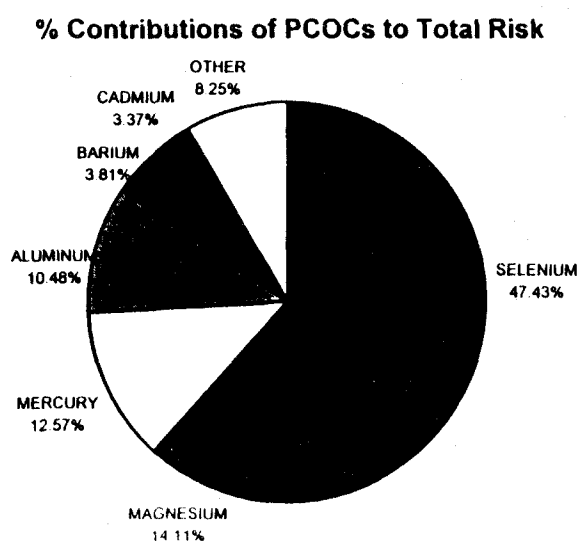
HAZARD INDEX 7.69

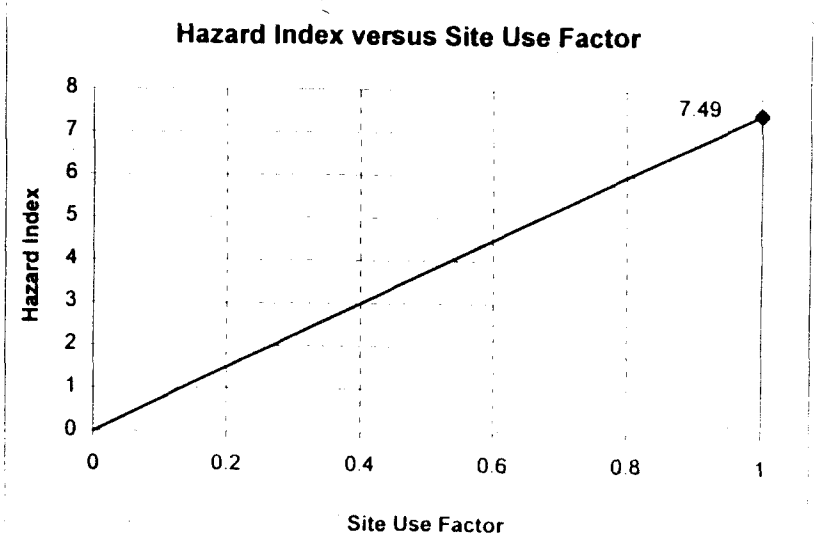
Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

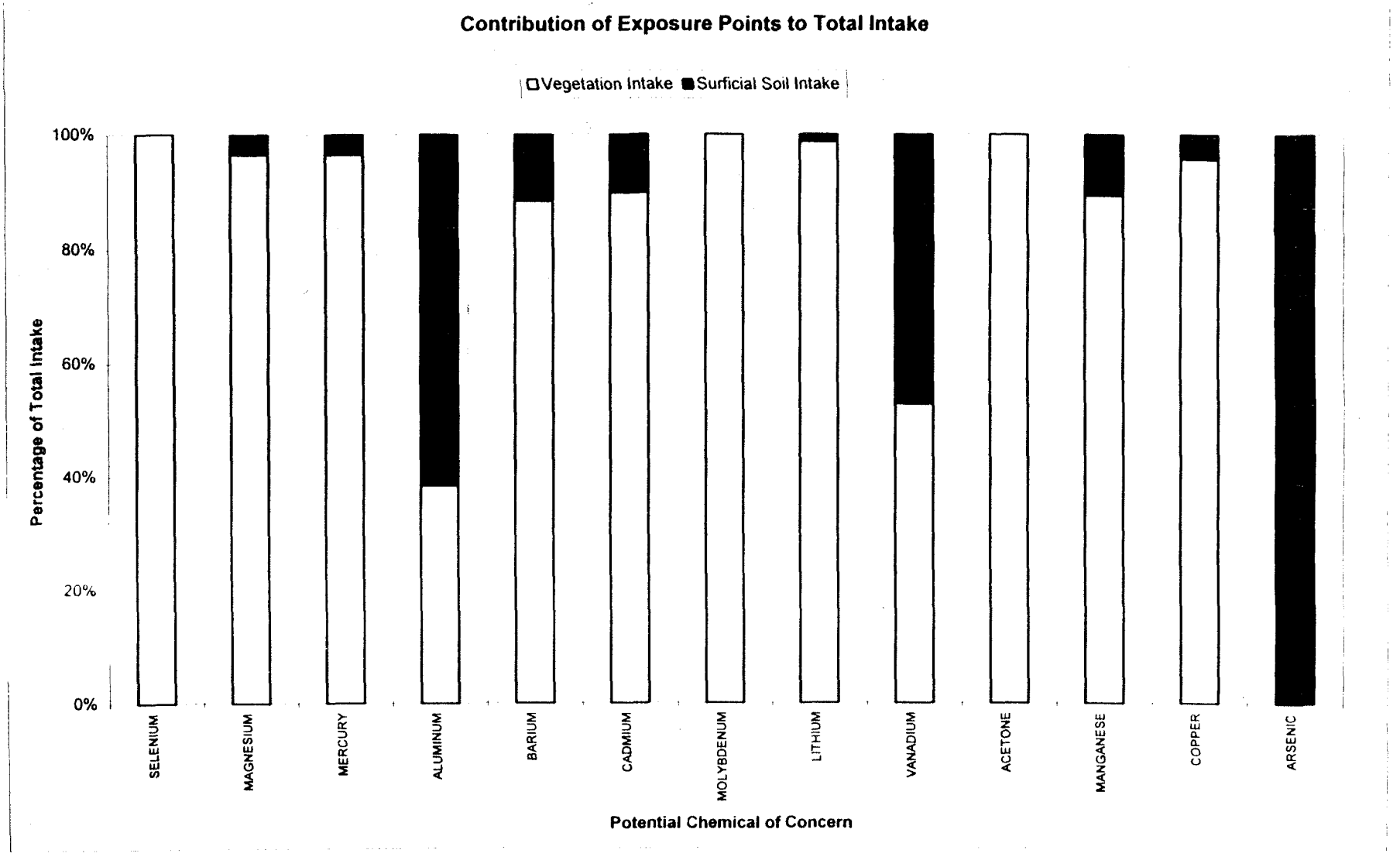
Summary of Ecotoxicological Risk to Preble's Meadow Jump...g Mice in the OU6 Soil Dump Areas Source Area at RFETS







Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU6 Soil Dump Areas Source Area at RFETS



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU6 Soil Dump Areas Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU6 SOIL DUMP AREAS		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU6	IR = NR SUF = 1		IR = 0.170 SUF = 1			IR = 0.004 SUF = 1		IR = I SUF = I		IR = I SUF = I					
SELENIUM		NR	—	6.623		1.126	ND	—	NR	—	NR	—	1.126	0.317	3.55	47.43%
MAGNESIUM	X	NR	—	1537.931		261.448	2354.730	9.419	NR	—	NR	—	270.867	256.400	1.06	14.11%
MERCURY	X	NR	—	0.090		0.015	0.139	0.001	NR	—	NR	—	0.016	0.017	0.94	12.57%
ALUMINUM		NR	—	141.997		24.140	9659.033	38.636	NR	—	NR	—	62.776	80.009	0.78	10.48%
BARIUM	X	NR	—	21.085		3.584	117.141	0.469	NR	—	NR	—	4.053	14.217	0.29	3.81%
CADMIUM		NR	—	0.640		0.109	3.054	0.012	NR	—	NR	—	0.121	0.479	0.25	3.37%
MOLYBDENUM	X	NR	—	8.400		1.428	ND	—	NR	—	NR	—	1.428	12.061	0.12	1.58%
LITHIUM		NR	—	16.100		2.737	9.142	0.037	NR	—	NR	—	2.774	24.571	0.11	1.51%
VANADIUM	X	NR	—	0.710		0.121	26.996	0.108	NR	—	NR	—	0.229	2.313	0.10	1.32%
ACETONE	X	NR	—	NR	11.617	1.975	NR	—	NR	—	NR	—	1.975	26.167	0.08	1.01%
MANGANESE	X	NR	—	48.491		8.243	244.118	0.976	NR	—	NR	—	9.220	230.264	0.04	0.53%
COPPER	X	NR	—	8.057		1.370	15.408	0.062	NR	—	NR	—	1.431	43.327	0.03	0.44%
ARSENIC	X	NR	—	ND		—	4.989	0.020	NR	—	NR	—	0.020	0.682	0.03	0.39%
NICKEL	X	NR	—	12.700		2.159	11.325	0.045	NR	—	NR	—	2.204	104.666	0.02	0.28%
STRONTIUM	X	NR	—	80.644		13.709	37.401	0.150	NR	—	NR	—	13.859	688.177	0.02	0.27%
LEAD	X	NR	—	1.224		0.208	24.511	0.098	NR	—	NR	—	0.306	20.933	0.01	0.20%
AROCLOR-1254	X	NR	—	NR	ND	—	0.429	0.002	NR	—	NR	—	0.002	0.142	0.01	0.19%
ZINC	X	NR	—	32.108		5.458	94.049	0.376	NR	—	NR	—	5.835	418.663	0.01	0.19%
TIN		NR	—	4.400		0.748	22.063	0.088	NR	—	NR	—	0.836	65.961	0.01	0.17%
COBALT	X	NR	—	ND		—	6.279	0.025	NR	—	NR	—	0.025	13.192	<0.01	0.03%
BENZO(a)PYRENE	X	NR	—	NR	0.002	2.91E-04	0.495	0.002	NR	—	NR	—	0.002	1.163	<0.01	0.02%
THALLIUM		NR	—	ND		—	0.260	0.001	NR	—	NR	—	0.001	0.697	<0.01	0.02%
BERYLLIUM		NR	—	ND		—	0.621	0.002	NR	—	NR	—	0.002	1.727	<0.01	0.02%
NITRATE/NITRITE		NR	—	NR		—	7.689	0.031	NR	—	NR	—	0.031	34.669	<0.01	0.01%
DIBENZO(a,h)ANTHRACENE	X	NR	—	NR	ND	—	0.130	0.001	NR	—	NR	—	0.001	1.163	<0.01	0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	0.050	0.009	2.270	0.009	NR	—	NR	—	0.018	21.321	<0.01	0.01%
BENZO(k)FLUORANTHENE	X	NR	—	NR	2.55E-04	4.34E-05	2.200	0.009	NR	—	NR	—	0.009	11.634	<0.01	0.01%
PENTACHLOROPHENOL		NR	—	NR	0.032	0.006	ND	—	NR	—	NR	—	0.006	7.915	<0.01	0.01%
TOLUENE	X	NR	—	NR	0.112	0.019	NR	—	NR	—	NR	—	0.019	30.220	<0.01	0.01%
BENZO(b)FLUORANTHENE	X	NR	—	NR	0.001	1.79E-04	0.855	0.003	NR	—	NR	—	0.004	11.634	<0.01	<0.01%
PHENOL	X	NR	—	NR	0.305	0.052	ND	—	NR	—	NR	—	0.052	158.307	<0.01	<0.01%
2-BUTANONE	X	NR	—	NR	7.542	1.282	NR	—	NR	—	NR	—	1.282	4672.704	<0.01	<0.01%
METHYLENE CHLORIDE	X	NR	—	NR	0.021	0.004	NR	—	NR	—	NR	—	0.004	15.307	<0.01	<0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	0.001	2.53E-04	0.526	0.002	NR	—	NR	—	0.002	11.634	<0.01	<0.01%
4-METHYL-2-PENTANONE	X	NR	—	NR	0.036	0.006	NR	—	NR	—	NR	—	0.006	65.416	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	1.36E-04	2.31E-05	0.334	0.001	NR	—	NR	—	0.001	11.634	<0.01	<0.01%
PYRENE	X	NR	—	NR	0.008	0.001	1.337	0.005	NR	—	NR	—	0.007	87.321	<0.01	<0.01%
TOTAL XYLENES		NR	—	NR	0.001	1.86E-04	NR	—	NR	—	NR	—	1.86E-04	2.396	<0.01	<0.01%
TETRACHLOROETHENE	X	NR	—	NR	0.004	0.001	NR	—	NR	—	NR	—	0.001	16.300	<0.01	<0.01%
FLUORANTHENE	X	NR	—	NR	0.007	0.001	1.376	0.006	NR	—	NR	—	0.007	145.535	<0.01	<0.01%

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU6 Soil Dump Areas Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU6 SOIL DUMP AREAS		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU6	IR = NR SUF = 1		IR = 0.170 SUF = 1			IR = 0.004 SUF = 1		IR = I SUF = I		IR = I SUF = I					
BENZENE	X	NR	—	NR	0.007	0.001	NR	—	NR	—	NR	—	0.001	30.662	<0.01	<0.01%
CHRYSENE	X	NR	—	NR	0.003	4.52E-04	0.577	0.002	NR	—	NR	—	0.003	116.343	<0.01	<0.01%
CHROMIUM	X	NR	—	ND		—	15.651	0.063	NR	—	NR	—	0.063	7161.754	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	—	NR	ND	—	0.292	0.001	NR	—	NR	—	0.001	116.343	<0.01	<0.01%
FLUORENE	X	NR	—	NR	ND	—	0.232	0.001	NR	—	NR	—	0.001	145.535	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	ND	—	0.473	0.002	NR	—	NR	—	0.002	329.807	<0.01	<0.01%
PHENANTHRENE	X	NR	—	NR	0.016	0.003	1.056	0.004	NR	—	NR	—	0.007	1163.433	<0.01	<0.01%
BUTYL BENZYL PHTHALATE	X	NR	—	NR	ND	—	0.072	2.88E-04	NR	—	NR	—	2.88E-04	93.349	<0.01	<0.01%
DI-n-OCTYL PHTHALATE	X	NR	—	NR	6.60E-05	1.12E-05	0.658	0.003	NR	—	NR	—	0.003	1217.647	<0.01	<0.01%
ACENAPHTHENE	X	NR	—	NR	0.009	0.002	0.244	0.001	NR	—	NR	—	0.002	1163.433	<0.01	<0.01%
ANTHRACENE	X	NR	—	NR	ND	—	0.382	0.002	NR	—	NR	—	0.002	1164.277	<0.01	<0.01%
NAPHTHALENE	X	NR	—	NR	ND	—	0.110	4.40E-04	NR	—	NR	—	4.40E-04	1163.433	<0.01	<0.01%

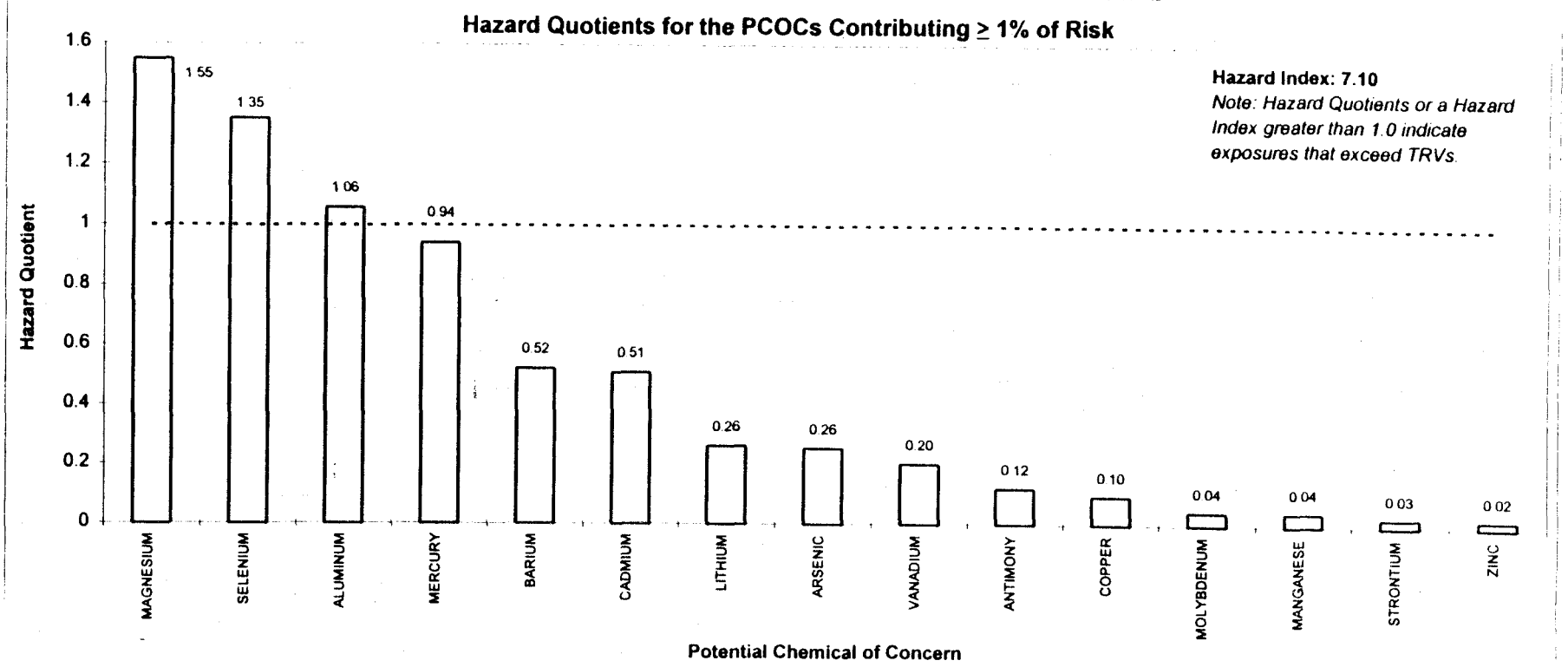
HAZARD INDEX 7.49

Notes:

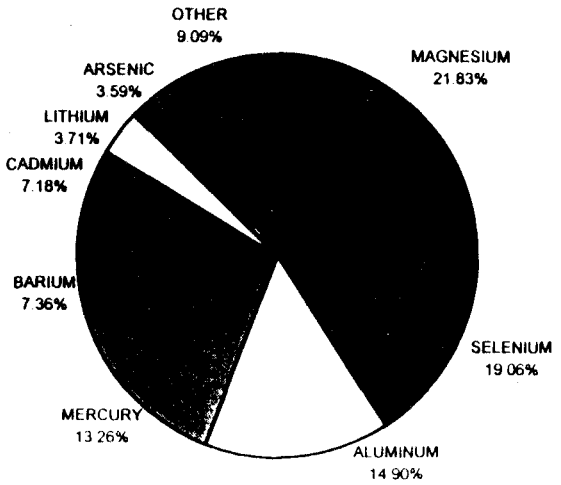
RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU6 A-Ponds Source Area at RFETS

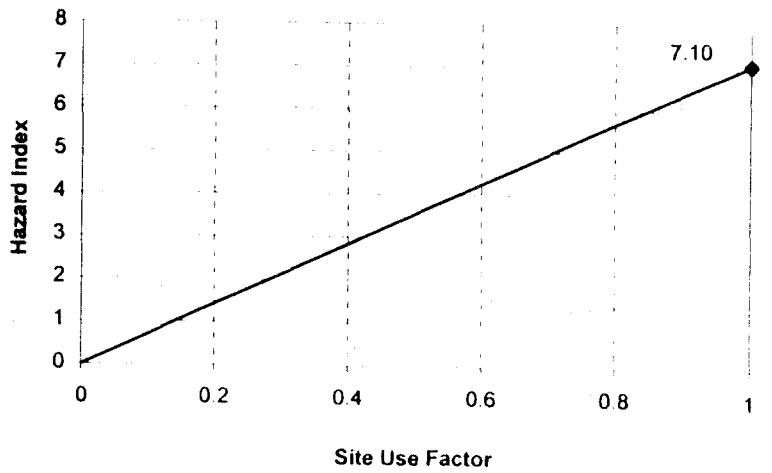
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



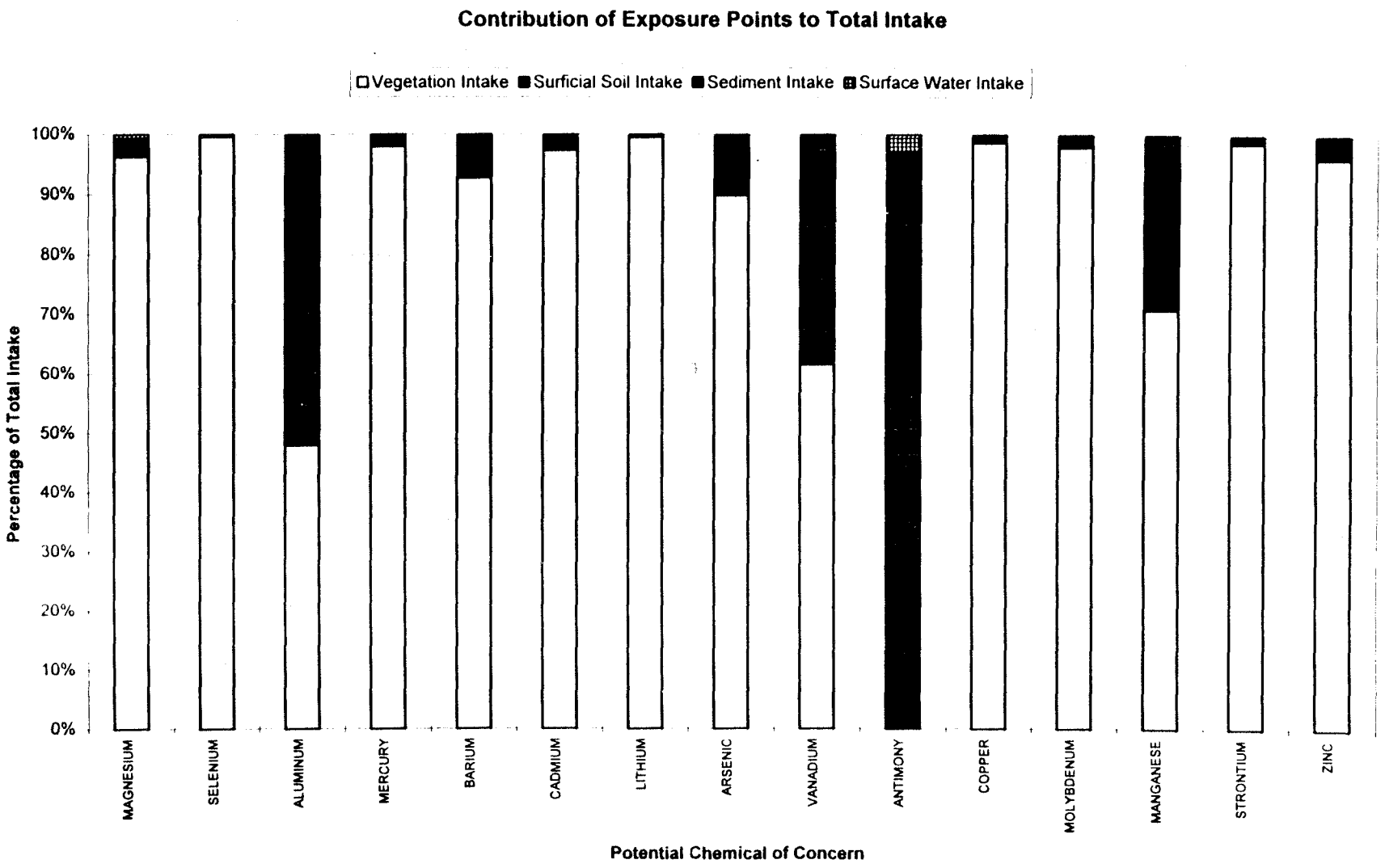
% Contributions of PCOCs to Total Risk



Hazard Index versus Site Use Factor



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU6 A-Ponds Source Area at RFETS



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU6 A-Ponds Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU6 A-PONDS		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment[1]		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU6	IR = NR SUF = 1		IR = 0.170 SUF = 1			IR = 0.002 SUF = 1		IR = 0.002 SUF = 1		IR = 0.160 SUF = 1					
MAGNESIUM	X	NR	—	2252.596		382.941	1880.000	3.760	3921.004	7.842	18.851	2.828	397.371	256.400	1.55	21.83%
SELENIUM		NR	—	2.516		0.428	ND	—	0.640	0.001	0.003	4.92E-04	0.429	0.317	1.35	19.06%
ALUMINUM		NR	—	238.686		40.577	7830.000	15.660	14176.386	28.353	0.405	0.061	84.650	80.009	1.06	14.90%
MERCURY	X	NR	—	0.090		0.015	ND	—	0.142	2.83E-04	1.49E-04	2.24E-05	0.016	0.017	0.94	13.26%
BARIUM	X	NR	—	40.567		6.896	100.000	0.200	163.378	0.327	0.062	0.009	7.432	14.217	0.52	7.36%
CADMIUM		NR	—	1.400		0.238	2.200	0.004	0.945	0.002	0.001	1.44E-04	0.244	0.479	0.51	7.18%
LITHIUM		NR	—	37.901		6.443	4.800	0.010	8.270	0.017	0.031	0.005	6.474	24.571	0.26	3.71%
ARSENIC	X	NR	—	0.920		0.156	2.200	0.004	6.354	0.013	0.004	0.001	0.174	0.682	0.26	3.59%
VANADIUM	X	NR	—	1.700		0.289	51.100	0.102	38.875	0.078	0.002	3.44E-04	0.469	2.313	0.20	2.86%
ANTIMONY	X	NR	—	ND		—	ND	—	20.227	0.040	0.009	0.001	0.042	0.346	0.12	1.71%
COPPER	X	NR	—	24.122		4.101	5.000	0.010	22.165	0.044	0.002	3.15E-04	4.155	43.327	0.10	1.35%
MOLYBDENUM	X	NR	—	3.100		0.527	5.300	0.011	ND	—	0.003	4.62E-04	0.538	12.061	0.04	0.63%
MANGANESE	X	NR	—	42.435		7.214	1110.000	2.220	362.368	0.725	0.179	0.027	10.186	230.264	0.04	0.62%
STRONTIUM	X	NR	—	112.501		19.125	37.100	0.074	73.117	0.146	0.278	0.042	19.387	688.177	0.03	0.40%
ZINC	X	NR	—	57.285		9.739	65.800	0.132	130.564	0.261	0.008	0.001	10.132	418.663	0.02	0.34%
NICKEL	X	NR	—	14.200		2.414	13.100	0.026	17.820	0.036	0.003	4.17E-04	2.476	104.666	0.02	0.33%
TIN		NR	—	5.798		0.986	93.300	0.187	ND	—	ND	—	1.172	65.961	0.02	0.25%
COBALT	X	NR	—	1.000		0.170	7.100	0.014	11.590	0.023	0.001	2.19E-04	0.208	13.192	0.02	0.22%
LEAD	X	NR	—	1.107		0.188	33.000	0.066	26.601	0.053	0.003	4.98E-04	0.308	20.933	0.01	0.21%
ACETONE	X	NR	—	NR	0.693	0.118	NR	—	0.230	4.60E-04	ND	—	0.118	26.167	<0.01	0.06%
AROCLOR 1254	X	NR	—	ND		—	ND	—	0.182	3.64E-04	NR	—	3.64E-04	0.142	<0.01	0.04%
BERYLLIUM		NR	—	ND		—	1.300	0.003	0.710	0.001	ND	—	0.004	1.727	<0.01	0.03%
THALLIUM		NR	—	ND		—	ND	—	0.690	0.001	ND	—	0.001	0.697	<0.01	0.02%
BENZO(a)PYRENE	X	NR	—	NR	NR	—	ND	—	0.282	0.001	ND	—	0.001	1.163	<0.01	0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	NR	—	ND	—	1.241	0.002	ND	—	0.002	21.321	<0.01	<0.01%
TOLUENE	X	NR	—	NR	0.016	0.003	NR	—	0.178	3.55E-04	ND	—	0.003	30.220	<0.01	<0.01%
BENZO(b)FLUORANTHENE	X	NR	—	NR	NR	—	ND	—	0.312	0.001	ND	—	0.001	11.634	<0.01	<0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	NR	—	ND	—	0.270	0.001	ND	—	0.001	11.634	<0.01	<0.01%
ALDRIN	X	NR	—	NR	NR	—	ND	—	0.009	1.84E-05	NR	—	1.84E-05	0.523	<0.01	<0.01%
BENZO(k)FLUORANTHENE	X	NR	—	NR	NR	—	ND	—	0.200	4.00E-04	ND	—	4.00E-04	11.634	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	NR	—	ND	—	0.200	4.00E-04	ND	—	4.00E-04	11.634	<0.01	<0.01%
4,4'-DDT		NR	—	NR	NR	—	0.026	5.20E-05	ND	—	NR	—	5.20E-05	2.094	<0.01	<0.01%
METHYLENE CHLORIDE	X	NR	—	NR	ND	—	NR	—	ND	—	0.002	3.00E-04	3.00E-04	15.307	<0.01	<0.01%
delta-BHC		NR	—	NR	NR	—	0.023	4.60E-05	ND	—	NR	—	4.60E-05	4.186	<0.01	<0.01%
PYRENE	X	NR	—	NR	NR	—	ND	—	0.343	0.001	ND	—	0.001	87.321	<0.01	<0.01%
CHROMIUM	X	NR	—	ND		—	9.000	0.018	13.994	0.028	0.002	2.45E-04	0.046	7161.754	<0.01	<0.01%
FLUORANTHENE	X	NR	—	NR	NR	—	ND	—	0.405	0.001	ND	—	0.001	145.535	<0.01	<0.01%
SILVER	X	NR	—	ND		—	ND	—	ND	—	0.002	2.79E-04	2.79E-04	58.626	<0.01	<0.01%
CHRYSENE	X	NR	—	NR	NR	—	ND	—	0.268	0.001	ND	—	0.001	116.343	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	—	NR	NR	—	ND	—	0.210	4.20E-04	ND	—	4.20E-04	116.343	<0.01	<0.01%

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU6 A-Ponds Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU6 A-PONDS		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment[1]		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU6	IR = NR SUF = 1		IR = 0.170 SUF = 1			IR = 0.002 SUF = 1		IR = 0.002 SUF = 1		IR = 0.150 SUF = 1					
PHENOL	X	NR	—	NR	NR	—	ND	—	0.110	2.20E-04	ND	—	2.20E-04	158.307	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	NR	—	ND	—	ND	—	0.002	3.00E-04	3.00E-04	329.807	<0.01	<0.01%
PHENANTHRENE	X	NR	—	NR	NR	—	ND	—	0.311	0.001	ND	—	0.001	1163.433	<0.01	<0.01%
DI-n-OCTYL PHTHALATE	X	NR	—	NR	NR	—	ND	—	0.130	2.60E-04	ND	—	2.60E-04	1217.647	<0.01	<0.01%
BENZENE	X	NR	—	NR	ND	—	NR	—	0.003	6.00E-06	ND	—	6.00E-06	30.662	<0.01	<0.01%
4-METHYL-2-PENTANONE	X	NR	—	NR	ND	—	NR	—	0.006	1.20E-05	ND	—	1.20E-05	65.416	<0.01	<0.01%
ACENAPHTHENE	X	NR	—	NR	NR	—	ND	—	0.089	1.78E-04	ND	—	1.78E-04	1163.433	<0.01	<0.01%
ANTHRACENE	X	NR	—	NR	NR	—	ND	—	0.088	1.76E-04	ND	—	1.76E-04	1164.277	<0.01	<0.01%
2-BUTANONE	X	NR	—	NR	ND	—	NR	—	0.051	1.02E-04	ND	—	1.02E-04	4672.704	<0.01	<0.01%

[1] Because Preble's meadow jumping mice have been captured in sediments in this source area, exposure from dry sediment intake is estimated.

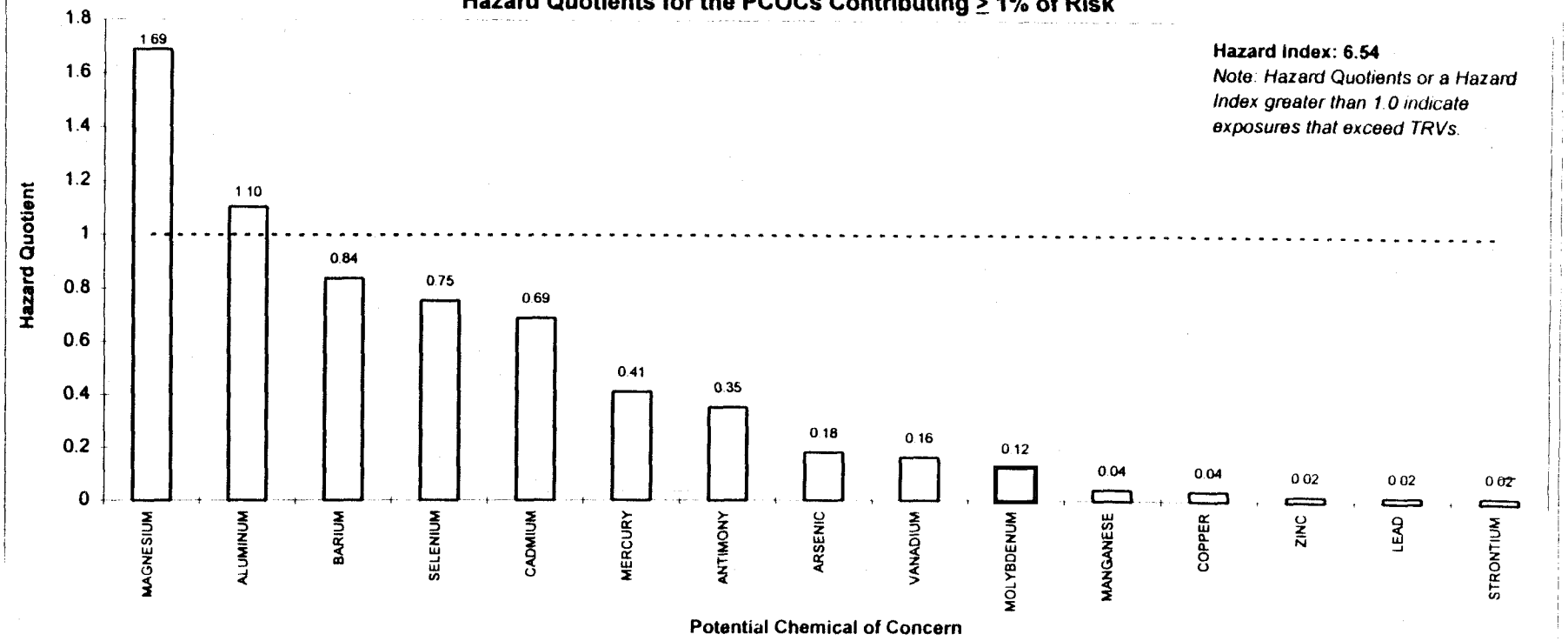
HAZARD INDEX 7.10

Notes:

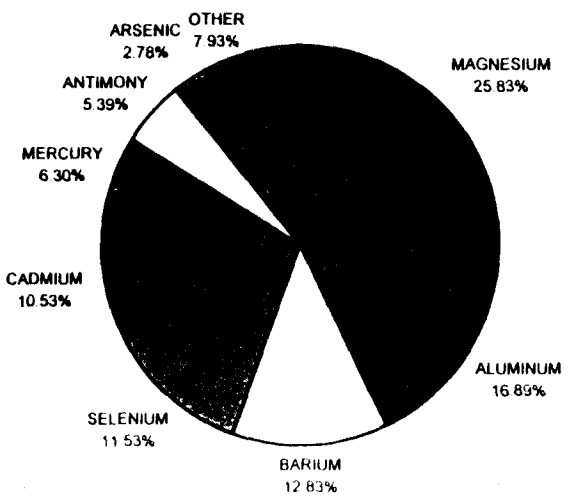
RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
— = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU5 Old Landfill Source Area at RFETS

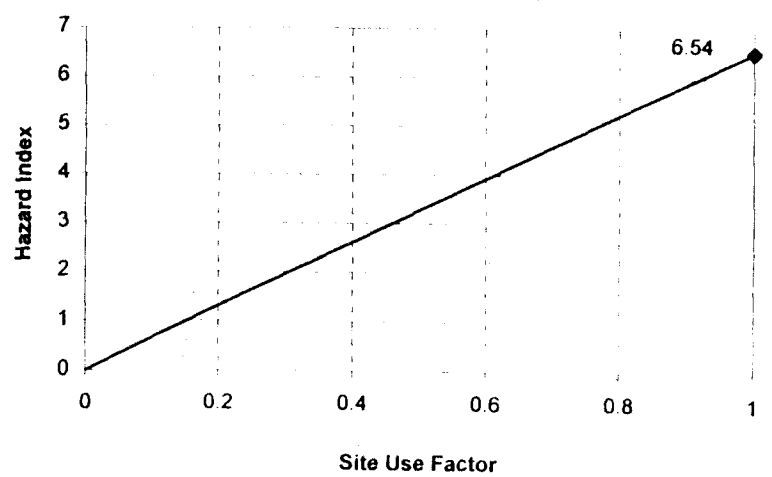
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



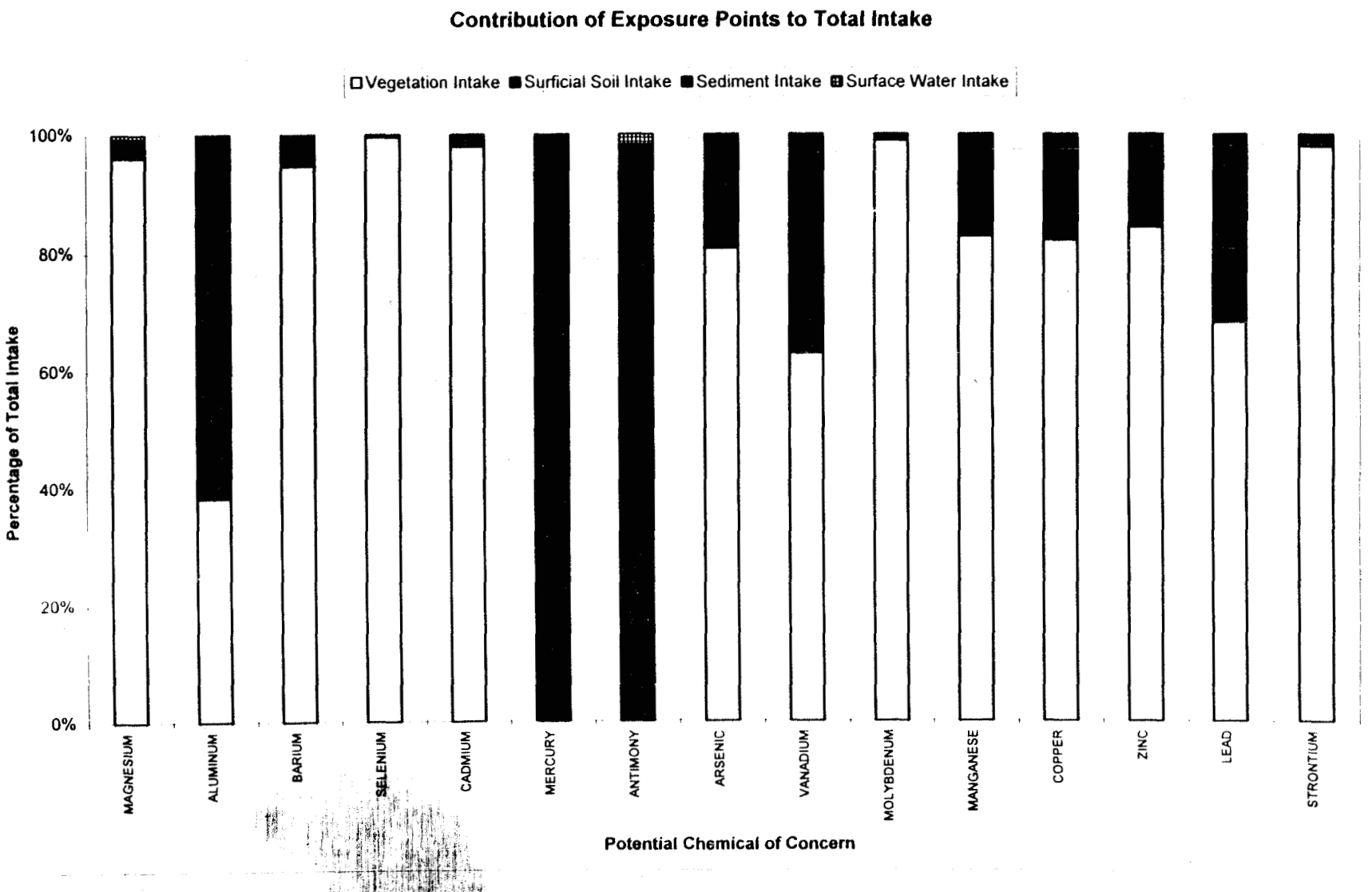
% Contributions of PCOCs to Total Risk



Hazard Index versus Site Use Factor



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU5 Old Landfill Source Area at RFETS



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU5 Old Landfill Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU5 OLD LANDFILL		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU5	IR = NR SUF = 1		IR = 0.170 SUF = 1			IR = 0.002 SUF = 1		IR = 0.002 SUF = 1		IR = 0.160 SUF = 1					
MAGNESIUM		NR	—	2448.896		416.312	2298.534	4.597	4628.783	9.258	19.837	2.976	433.143	256.400	1.69	25.83%
ALUMINUM		NR	—	199.127		33.852	11074.656	22.149	16076.395	32.153	1.471	0.221	88.374	80.009	1.10	16.89%
BARIUM	X	NR	—	66.461		11.298	115.593	0.231	186.000	0.372	0.162	0.024	11.926	14.217	0.84	12.83%
SELENIUM		NR	—	1.400		0.238	0.459	0.001	ND	—	0.003	3.78E-04	0.239	0.317	0.75	11.53%
CADMIUM		NR	—	1.900		0.323	0.880	0.002	2.486	0.005	0.002	2.40E-04	0.330	0.479	0.69	10.53%
MERCURY	X	NR	—	ND		—	0.124	2.48E-04	3.194	0.006	1.11E-04	1.67E-05	0.007	0.017	0.41	6.30%
ANTIMONY	X	NR	—	ND		—	8.677	0.017	51.300	0.103	0.015	0.002	0.122	0.346	0.35	5.39%
ARSENIC		NR	—	0.590		0.100	5.702	0.011	6.100	0.012	0.002	3.21E-04	0.124	0.682	0.18	2.78%
VANADIUM		NR	—	1.400		0.238	30.425	0.061	39.300	0.079	0.008	0.001	0.379	2.313	0.16	2.51%
MOLYBDENUM		NR	—	8.700		1.479	4.400	0.009	3.900	0.008	0.004	0.001	1.496	12.061	0.12	1.90%
MANGANESE		NR	—	47.237		8.030	277.661	0.555	556.331	1.113	0.061	0.009	9.707	230.264	0.04	0.64%
COPPER	X	NR	—	7.863		1.337	37.703	0.075	108.217	0.216	0.006	0.001	1.629	43.327	0.04	0.57%
ZINC	X	NR	—	44.205		7.515	66.571	0.133	634.180	1.268	0.022	0.003	8.920	418.663	0.02	0.33%
LEAD	X	NR	—	1.683		0.286	28.695	0.057	37.926	0.076	0.004	0.001	0.420	20.933	0.02	0.31%
STRONTIUM	X	NR	—	79.000		13.430	30.813	0.062	79.000	0.158	0.484	0.073	13.722	688.177	0.02	0.30%
AROCLOR-1254	X	NR	—	NR	0.001	2.47E-04	0.572	0.001	0.250	0.001	ND	—	0.002	0.142	0.01	0.22%
NICKEL		NR	—	8.000		1.360	14.939	0.030	21.300	0.043	0.009	0.001	1.434	104.666	0.01	0.21%
LITHIUM	X	NR	—	1.100		0.187	8.005	0.016	15.400	0.031	0.013	0.002	0.236	24.571	0.01	0.15%
ACETONE		NR	—	NR	1.397	0.238	ND	—	0.046	9.20E-05	0.022	0.003	0.241	26.167	0.01	0.14%
BENZO(a)PYRENE	X	NR	—	NR	0.030	0.005	2.636	0.005	ND	—	ND	—	0.010	1.163	0.01	0.13%
NITRATE/NITRITE		NR	—	NR		—	NR	—	6.526	0.013	1.490	0.224	0.237	34.669	0.01	0.10%
TIN		NR	—	2.100		0.357	9.714	0.019	ND	—	0.021	0.003	0.380	65.961	0.01	0.09%
SILVER	X	NR	—	1.000		0.170	7.180	0.014	6.597	0.013	0.003	0.001	0.198	58.626	<0.01	0.05%
COBALT	X	NR	—	ND		—	8.348	0.017	10.900	0.022	0.002	3.00E-04	0.039	13.192	<0.01	0.05%
BERYLLIUM		NR	—	ND		—	0.882	0.002	1.700	0.003	0.001	1.42E-04	0.005	1.727	<0.01	0.04%
THALLIUM		NR	—	ND		—	0.310	0.001	0.600	0.001	0.002	2.97E-04	0.002	0.697	<0.01	0.04%
DIBENZO(a,h)ANTHRACENE	X	NR	—	NR	0.003	0.001	0.758	0.002	ND	—	ND	—	0.002	1.163	<0.01	0.03%
BENZO(a)ANTHRACENE	X	NR	—	NR	0.038	0.006	2.850	0.006	0.038	7.60E-05	ND	—	0.012	11.634	<0.01	0.02%
PHENOL	X	NR	—	NR	0.777	0.132	ND	—	ND	—	ND	—	0.132	158.307	<0.01	0.01%
BENZO(b)FLUORANTHENE	X	NR	—	NR	0.016	0.003	3.179	0.006	ND	—	ND	—	0.009	11.634	<0.01	0.01%
PYRENE	X	NR	—	NR	0.201	0.034	7.090	0.014	0.097	1.94E-04	ND	—	0.049	87.321	<0.01	0.01%
METHYLENE CHLORIDE	X	NR	—	NR	0.042	0.007	ND	—	ND	—	0.003	4.59E-04	0.008	15.307	<0.01	0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	0.001	2.03E-04	2.572	0.005	ND	—	ND	—	0.005	11.634	<0.01	0.01%
TOTAL XYLENES		NR	—	NR	0.003	0.001	ND	—	ND	—	ND	—	0.001	2.396	<0.01	0.01%
FLUORANTHENE	X	NR	—	NR	0.208	0.035	8.267	0.017	0.097	1.94E-04	ND	—	0.052	145.535	<0.01	0.01%
DIELDRIN	X	NR	—	NR	ND	—	0.009	1.85E-05	ND	—	ND	—	1.85E-05	0.053	<0.01	0.01%
HEPTACHLOR EPOXIDE	X	NR	—	NR	0.001	2.20E-04	0.004	8.61E-06	ND	—	ND	—	2.29E-04	0.660	<0.01	0.01%
BENZO(k)FLUORANTHENE	X	NR	—	NR	0.005	0.001	1.694	0.003	ND	—	ND	—	0.004	11.634	<0.01	0.01%
FLUORENE	X	NR	—	NR	0.268	0.046	2.363	0.005	ND	—	ND	—	0.050	145.535	<0.01	0.01%
ENDRIN KETONE	X	NR	—	NR	NO LOG K_{OW}	—	0.009	1.87E-05	ND	—	ND	—	1.87E-05	0.061	<0.01	<0.01%
PENTACHLOROPHENOL	X	NR	—	NR	0.008	0.001	ND	—	ND	—	0.005	0.001	0.002	7.915	<0.01	<0.01%

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU5 Old Landfill Source Area at RFETS

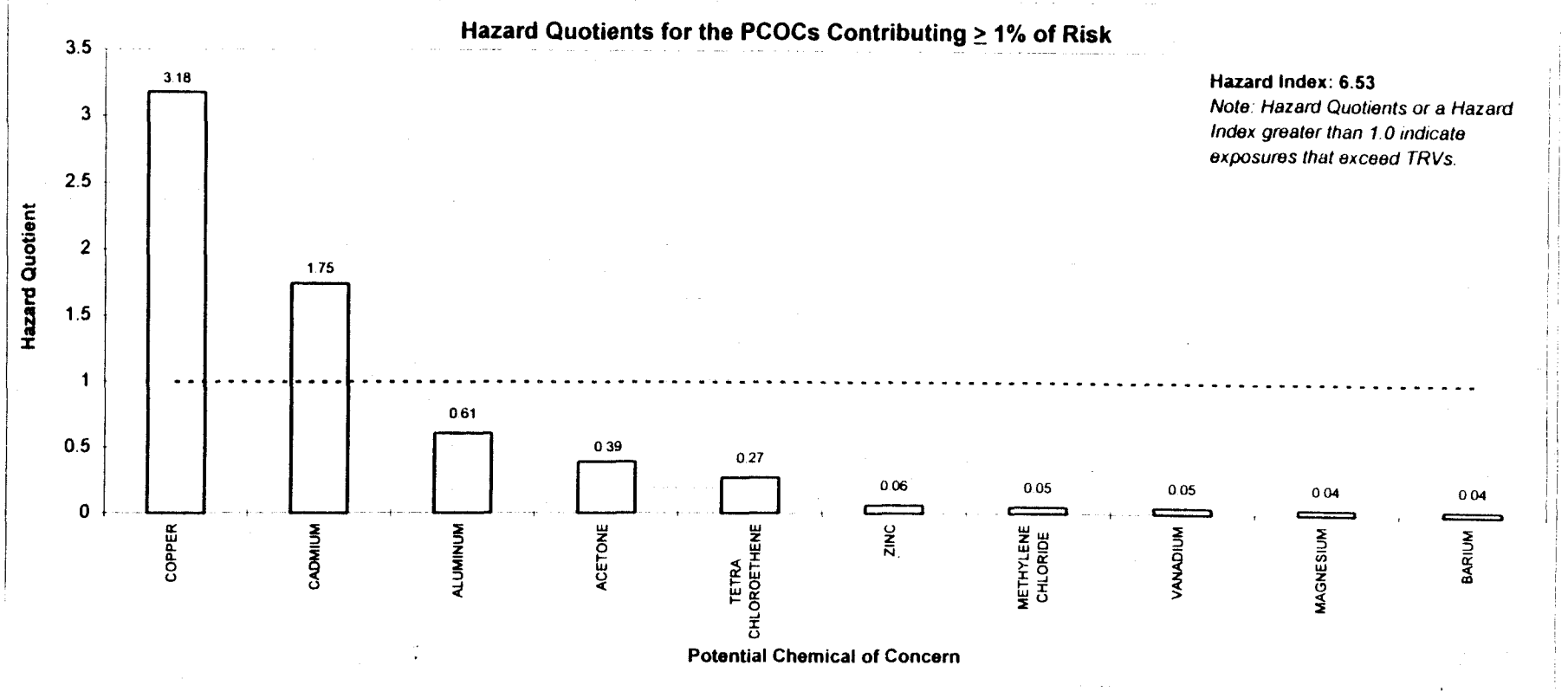
PREBLE'S MEADOW JUMPING MICE OU5 OLD LANDFILL		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU5	IR = NR SUF = 1		IR = 0.170 SUF = 1			IR = 0.002 SUF = 1		IR = 0.002 SUF = 1		IR = 0.150 SUF = 1					
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	0.023	0.004	0.210	4.20E-04	0.068	1.36E-04	0.002	3.00E-04	0.005	21.321	<0.01	<0.01%
NAPHTHALENE	X	NR	—	NR	1.297	0.221	2.498	0.005	ND	—	ND	—	0.226	1163.433	<0.01	<0.01%
TOLUENE	X	NR	—	NR	0.027	0.005	ND	—	ND	—	ND	—	0.005	30.220	<0.01	<0.01%
CHRYSENE	X	NR	—	NR	0.061	0.010	2.987	0.006	0.041	8.20E-05	ND	—	0.016	116.343	<0.01	<0.01%
TETRACHLOROETHENE		NR	—	NR	0.013	0.002	ND	—	0.001	2.00E-06	ND	—	0.002	16.300	<0.01	<0.01%
PHENANTHRENE	X	NR	—	NR	0.610	0.104	9.640	0.019	0.082	1.64E-04	ND	—	0.123	1163.433	<0.01	<0.01%
CHROMIUM		NR	—	3.600		0.612	13.088	0.026	22.917	0.046	0.004	0.001	0.685	7161.754	<0.01	<0.01%
BUTYL BENZYL PHTHALATE	X	NR	—	NR	0.024	0.004	0.220	4.40E-04	ND	—	ND	—	0.005	93.349	<0.01	<0.01%
4-METHYL-2-PENTANONE		NR	—	NR	0.018	0.003	ND	—	ND	—	ND	—	0.003	65.416	<0.01	<0.01%
ISOPHORONE	X	NR	—	NR	0.344	0.058	ND	—	ND	—	ND	—	0.058	1308.678	<0.01	<0.01%
ACENAPHTHENE	X	NR	—	NR	0.258	0.044	2.636	0.005	ND	—	ND	—	0.049	1163.433	<0.01	<0.01%
ANTHRACENE	X	NR	—	NR	0.243	0.041	2.816	0.006	ND	—	ND	—	0.047	1164.277	<0.01	<0.01%
TRICHLOROETHENE		NR	—	NR	0.019	0.003	ND	—	ND	—	0.003	4.31E-04	0.004	171.044	<0.01	<0.01%
2-METHYLNAPHTHALENE	X	NR	—	NR	0.141	0.024	0.944	0.002	ND	—	ND	—	0.026	1163.433	<0.01	<0.01%
ENDOSULFAN SULFATE	X	NR	—	NR	ND	—	0.009	1.75E-05	ND	—	ND	—	1.75E-05	0.912	<0.01	<0.01%
ALDRIN	X	NR	—	NR	ND	—	0.005	9.31E-06	ND	—	ND	—	9.31E-06	0.523	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	—	NR	0.002	3.95E-04	0.922	0.002	ND	—	ND	—	0.002	116.343	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	0.027	0.005	0.200	4.00E-04	ND	—	ND	—	0.005	329.807	<0.01	<0.01%
METHOXYCHLOR	X	NR	—	NR	ND	—	0.060	1.20E-04	ND	—	ND	—	1.20E-04	10.554	<0.01	<0.01%
CHLOROFORM		NR	—	NR	ND	—	ND	—	ND	—	0.003	3.80E-04	3.80E-04	39.250	<0.01	<0.01%
2-BUTANONE		NR	—	NR	0.234	0.040	ND	—	ND	—	0.006	0.001	0.041	4672.704	<0.01	<0.01%
4,4-DDT	X	NR	—	NR	ND	—	0.009	1.72E-05	ND	—	ND	—	1.72E-05	2.094	<0.01	<0.01%
AROCLOR 1260		NR	—	NR	0.001	1.07E-04	ND	—	ND	—	ND	—	1.07E-04	18.205	<0.01	<0.01%
1,1,1-TRICHLOROETHANE		NR	—	NR	0.003	4.92E-04	ND	—	ND	—	ND	—	4.92E-04	1223.894	<0.01	<0.01%
DI-n-OCTYL PHTHALATE	X	NR	—	NR	ND	—	0.083	1.66E-04	ND	—	ND	—	1.66E-04	1217.647	<0.01	<0.01%

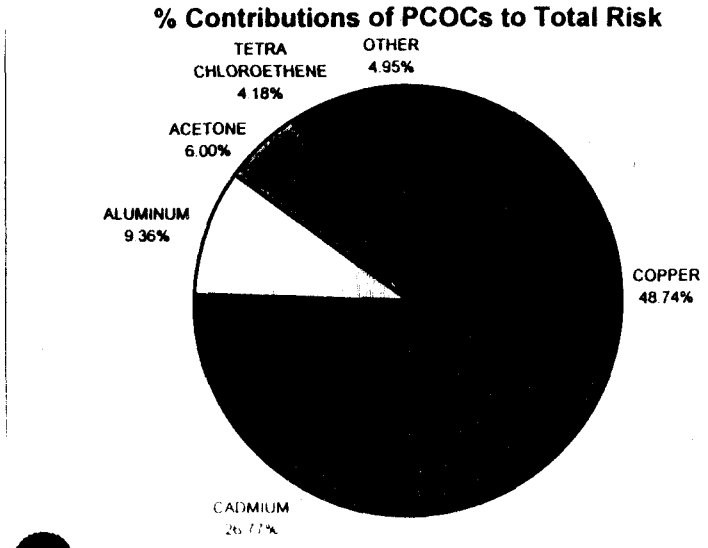
HAZARD INDEX 6.54

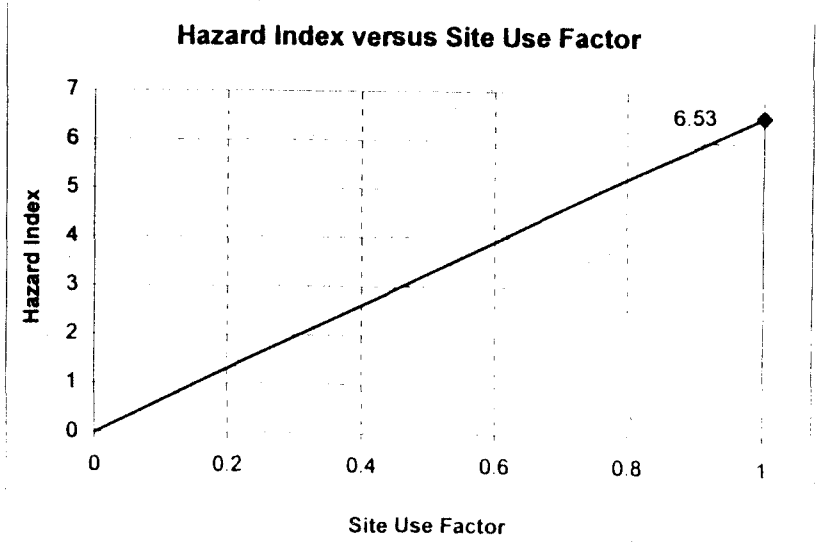
Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

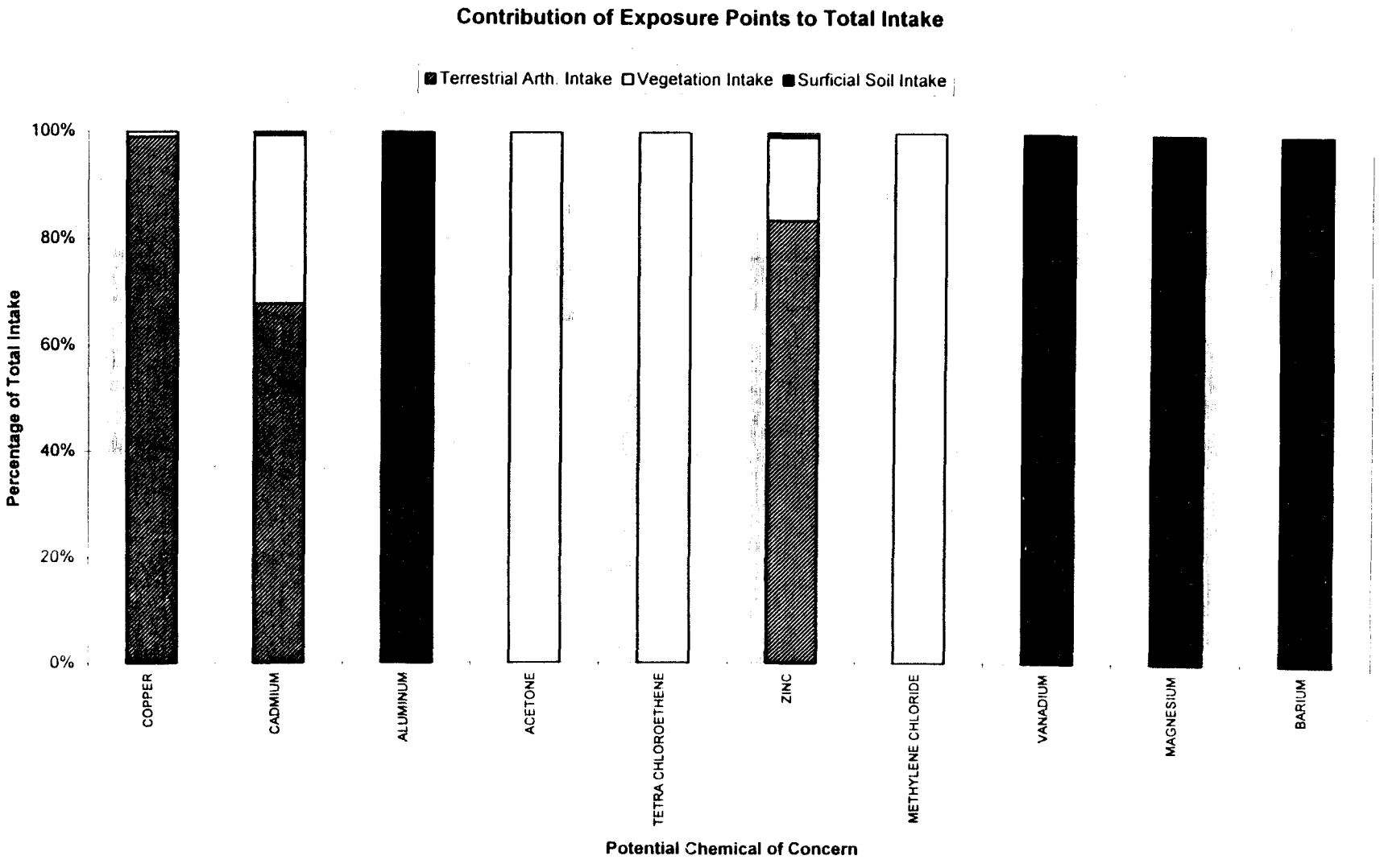
Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU2 East Trenches Source Area at RFETS







Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU2 East Trenches Source Area at RFETS



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU2 East Trenches Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU2 EAST TRENCHES		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU2	IR = 0.051 SUF = 1		IR = 0.119 SUF = 1			IR = 0.004 SUF = 1		IR = 1 SUF = 1		IR = 1 SUF = 1					
COPPER		2676.866	136.520	10.430		1.241	13.080	0.052	NR	—	NR	—	137.814	43.327	3.18	48.74%
CADMIUM		11.134	0.568	2.217		0.264	1.400	0.006	NR	—	NR	—	0.837	0.479	1.75	26.77%
ALUMINUM		NR	—	NR		—	12216.913	48.868	NR	—	NR	—	48.868	80.009	0.61	9.36%
ACETONE		NR	—	NR	86.139	10.251	NR	—	NR	—	NR	—	10.251	26.167	0.39	6.00%
TETRA CHLOROETHENE		NR	—	NR	37.359	4.446	NR	—	NR	—	NR	—	4.446	16.300	0.27	4.18%
ZINC		426.000	21.726	33.840		4.027	54.004	0.216	NR	—	NR	—	25.969	418.663	0.06	0.95%
METHYLENE CHLORIDE		NR	—	NR	6.373	0.758	NR	—	NR	—	NR	—	0.758	15.307	0.05	0.76%
VANADIUM		NR	—	NR		—	27.790	0.111	NR	—	NR	—	0.111	2.313	0.05	0.74%
MAGNESIUM		NR	—	NR		—	2431.742	9.727	NR	—	NR	—	9.727	256.400	0.04	0.58%
BARIUM		NR	—	NR		—	128.840	0.515	NR	—	NR	—	0.515	14.217	0.04	0.56%
ARSENIC		NR	—	NR		—	5.496	0.022	NR	—	NR	—	0.022	0.682	0.03	0.49%
LEAD	X	ND	—	1.509		0.180	45.985	0.184	NR	—	NR	—	0.364	20.933	0.02	0.27%
SELENIUM		ND	—	ND		—	0.510	0.002	NR	—	NR	—	0.002	0.317	0.01	0.10%
TOTAL XYLENES		NR	—	NR	0.126	0.015	NR	—	NR	—	NR	—	0.015	2.396	0.01	0.10%
MANGANESE		NR	—	NR		—	310.494	1.242	NR	—	NR	—	1.242	230.264	0.01	0.08%
CHLOROFORM		NR	—	NR	1.310	0.156	NR	—	NR	—	NR	—	0.156	39.250	<0.01	0.06%
AROCLOR-1254	X	NR	—	NR	0.003	3.28E-04	ND	—	NR	—	NR	—	3.28E-04	0.142	<0.01	0.04%
COBALT		NR	—	NR		—	7.136	0.029	NR	—	NR	—	0.029	13.192	<0.01	0.03%
LITHIUM		NR	—	NR		—	13.267	0.053	NR	—	NR	—	0.053	24.571	<0.01	0.03%
TIN		NR	—	NR		—	34.188	0.137	NR	—	NR	—	0.137	65.961	<0.01	0.03%
TOLUENE		NR	—	NR	0.453	0.054	NR	—	NR	—	NR	—	0.054	30.220	<0.01	0.03%
BERYLLIUM		NR	—	NR		—	0.590	0.002	NR	—	NR	—	0.002	1.727	<0.01	0.02%
TRICHLOROETHENE		NR	—	NR	1.663	0.198	NR	—	NR	—	NR	—	0.198	171.044	<0.01	0.02%
SILVER		ND	—	0.520		0.062	1.200	0.005	NR	—	NR	—	0.067	58.626	<0.01	0.02%
BENZO(a)PYRENE	X	NR	—	NR	0.002	2.77E-04	0.120	4.80E-04	NR	—	NR	—	0.001	1.163	<0.01	0.01%
CHROMIUM	X	63.475	3.237	7.227		0.860	12.981	0.052	NR	—	NR	—	4.149	7161.754	<0.01	0.01%
1,2-DICHLOROETHENE		NR	—	NR	0.216	0.026	NR	—	NR	—	NR	—	0.026	52.625	<0.01	0.01%
NICKEL		NR	—	NR		—	11.629	0.047	NR	—	NR	—	0.047	104.666	<0.01	0.01%
4-METHYL-2-PENTANONE		NR	—	NR	0.191	0.023	NR	—	NR	—	NR	—	0.023	65.416	<0.01	0.01%
STRONTIUM		NR	—	NR		—	34.852	0.139	NR	—	NR	—	0.139	688.177	<0.01	<0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	0.024	0.003	0.076	3.04E-04	NR	—	NR	—	0.003	21.321	<0.01	<0.01%
BENZENE		NR	—	NR	0.032	0.004	NR	—	NR	—	NR	—	0.004	30.662	<0.01	<0.01%
1,1,1-TRICHLOROETHANE		NR	—	NR	0.813	0.097	NR	—	NR	—	NR	—	0.097	1223.894	<0.01	<0.01%
BENZO(b)FLUORANTHENE	X	NR	—	NR	0.001	1.34E-04	0.160	0.001	NR	—	NR	—	0.001	11.634	<0.01	<0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	0.003	3.17E-04	0.062	2.48E-04	NR	—	NR	—	0.001	11.634	<0.01	<0.01%
2-BUTANONE		NR	—	NR	1.787	0.213	NR	—	NR	—	NR	—	0.213	4672.704	<0.01	<0.01%
1,1-DICHLOROETHENE		NR	—	NR	0.030	0.004	NR	—	NR	—	NR	—	0.004	79.154	<0.01	<0.01%
PYRENE	X	NR	—	NR	0.009	0.001	0.218	0.001	NR	—	NR	—	0.002	87.321	<0.01	<0.01%
FLUORENE		NR	—	NR	0.026	0.003	ND	—	NR	—	NR	—	0.003	145.535	<0.01	<0.01%
FLUORANTHENE	X	NR	—	NR	0.007	0.001	0.229	0.001	NR	—	NR	—	0.002	145.535	<0.01	<0.01%
NAPHTHALENE		NR	—	NR	0.093	0.011	ND	—	NR	—	NR	—	0.011	1163.433	<0.01	<0.01%

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU2 East Trenches Source Area at RFETS

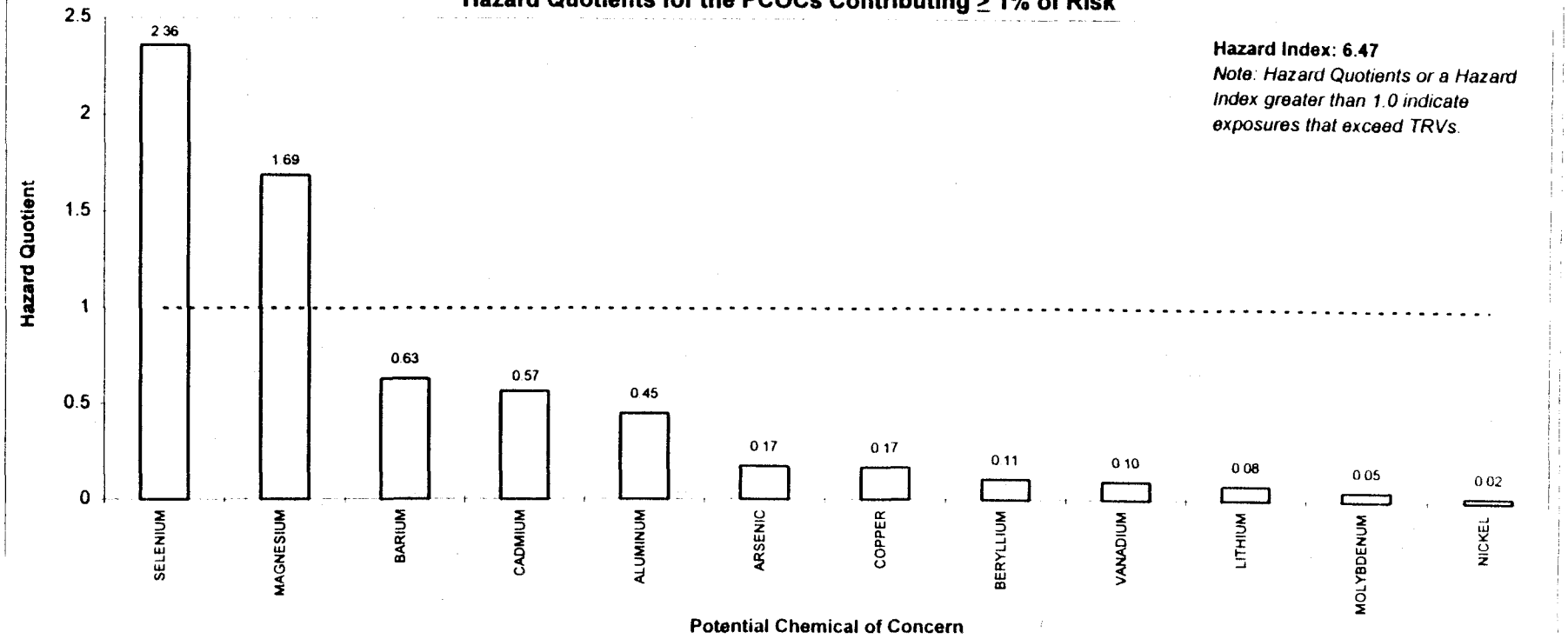
PREBLE'S MEADOW JUMPING MICE OU2 EAST TRENCHES		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU2	IR = 0.051 SUF = 1		IR = 0.119 SUF = 1			IR = 0.004 SUF = 1		IR = I SUF = I		IR = I SUF = I					
CHRYSENE	X	NR	—	NR	0.004	4.61E-04	0.110	4.40E-04	NR	—	NR	—	0.001	116.343	<0.01	<0.01%
4,4'-DDT	X	NR	—	NR	1.15E-04	1.37E-05	ND	—	NR	—	NR	—	1.37E-05	2.094	<0.01	<0.01%
2-METHYLNAPHTHALENE		NR	—	NR	0.060	0.007	ND	—	NR	—	NR	—	0.007	1163.433	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	0.017	0.002	ND	—	NR	—	NR	—	0.002	329.807	<0.01	<0.01%
ACENAPHTHENE		NR	—	NR	0.027	0.003	ND	—	NR	—	NR	—	0.003	1163.433	<0.01	<0.01%
PHENANTHRENE	X	NR	—	NR	0.024	0.003	0.091	3.64E-04	NR	—	NR	—	0.003	1163.433	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	2.38E-04	2.83E-05	ND	—	NR	—	NR	—	2.83E-05	11.634	<0.01	<0.01%
ANTHRACENE		NR	—	NR	0.018	0.002	ND	—	NR	—	NR	—	0.002	1164.277	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	—	NR	0.001	6.31E-05	ND	—	NR	—	NR	—	6.31E-05	116.343	<0.01	<0.01%

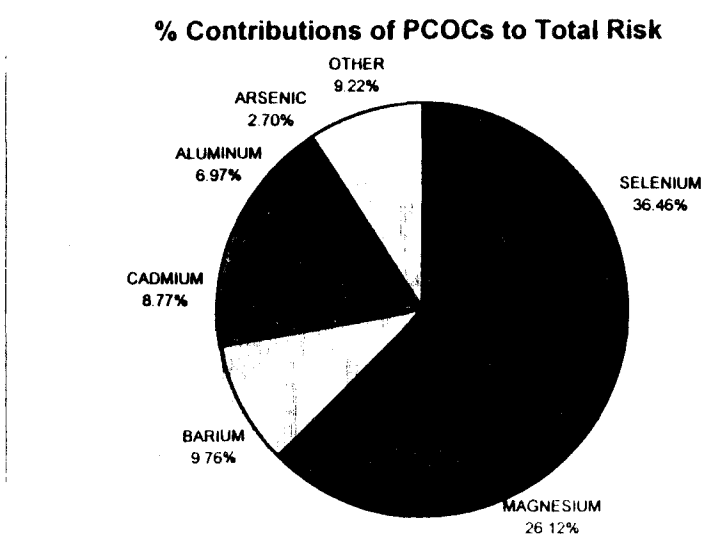
HAZARD INDEX 6.53

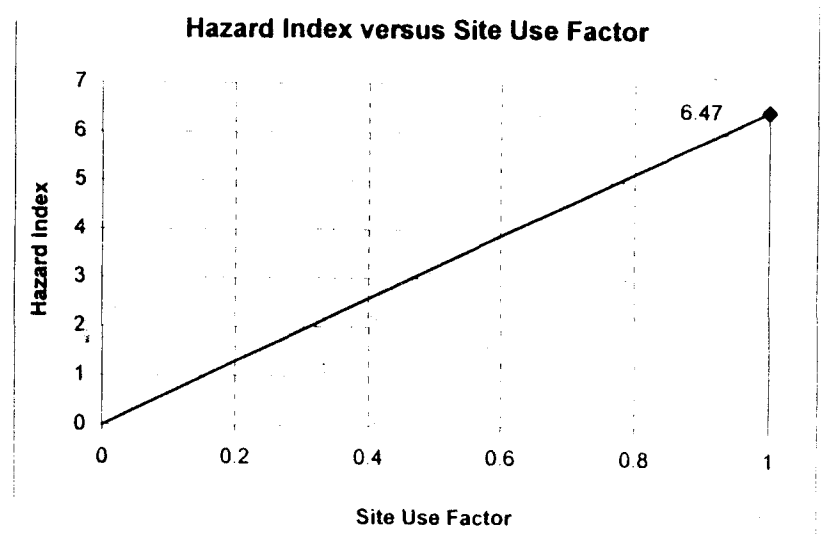
Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available. BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU7 Downgradient Areas Source Area at RFETS

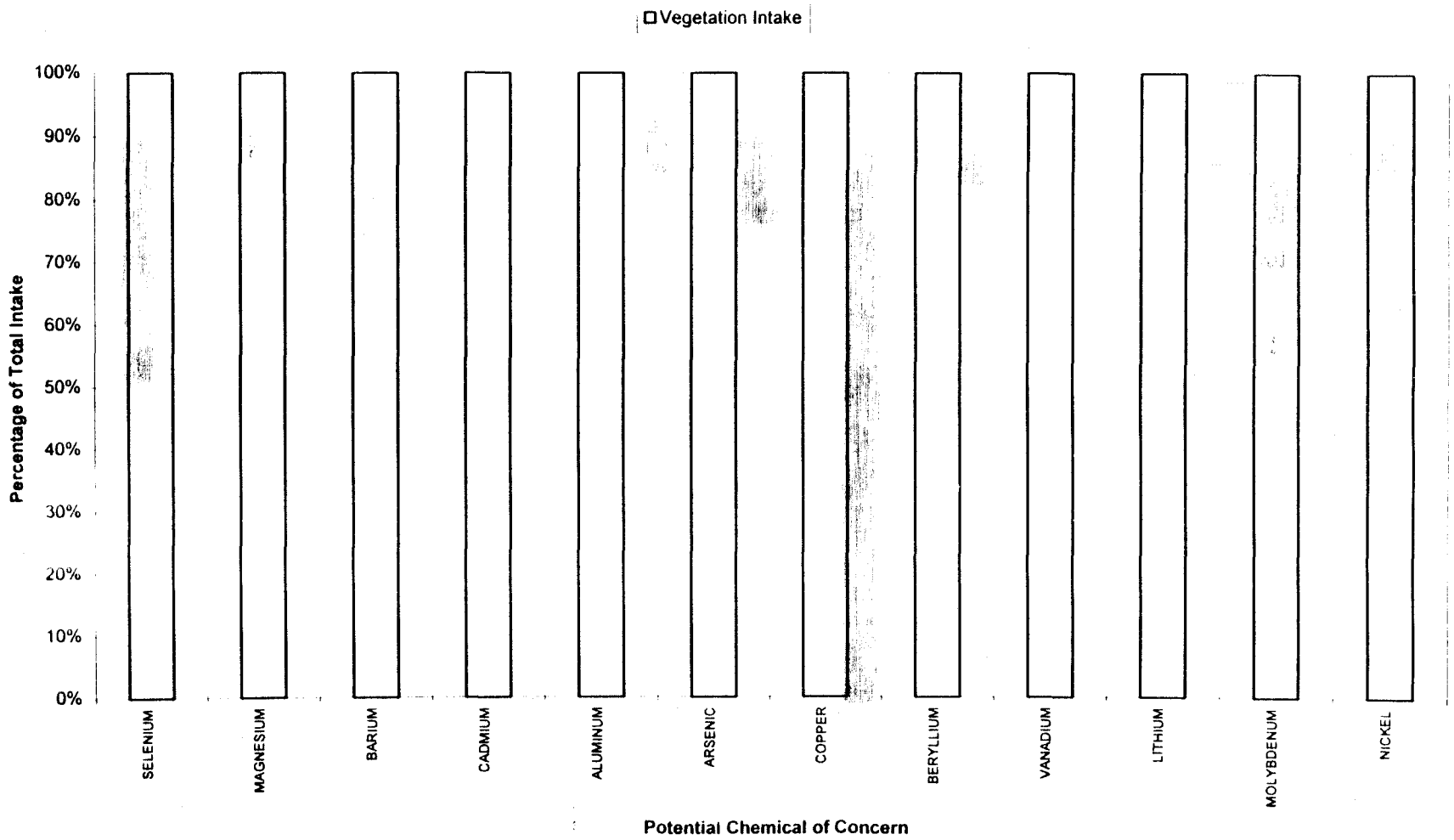






Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU7 Downgradient Areas Source Area at RFETS

Contribution of Exposure Points to Total Intake



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU7 Downgradient Areas Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU7 DOWNGRADIENT AREAS		EXPOSURE POINT												SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water						
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU7	IR = NR SUF = 1		IR = 0.170 SUF = 1			IR = 0.004 SUF = 1		IR = I SUF = I		IR = I SUF = I					
SELENIUM	X	NR	—	4.398		0.748	NR	—	0.651	—	0.007	—	0.748	0.317	2.36	36.46%
MAGNESIUM	X	NR	—	2549.843		433.473	NR	—	3336.582	—	25.696	—	433.473	256.400	1.69	26.12%
BARIUM	X	NR	—	52.799		8.976	NR	—	221.492	—	0.189	—	8.976	14.217	0.63	9.76%
CADMIUM		NR	—	1.600		0.272	NR	—	0.847	—	0.002	—	0.272	0.479	0.57	8.77%
ALUMINUM	X	NR	—	212.406		36.109	NR	—	18053.262	—	0.403	—	36.109	80.009	0.45	6.97%
ARSENIC	X	NR	—	0.700		0.119	NR	—	5.797	—	0.003	—	0.119	0.682	0.17	2.70%
COPPER	X	NR	—	42.778		7.272	NR	—	23.106	—	0.009	—	7.272	43.327	0.17	2.59%
BERYLLIUM	X	NR	—	1.100		0.187	NR	—	1.946	—	ND	—	0.187	1.727	0.11	1.67%
VANADIUM	X	NR	—	1.300		0.221	NR	—	47.764	—	0.007	—	0.221	2.313	0.10	1.48%
LITHIUM	X	NR	—	10.900		1.853	NR	—	11.200	—	0.020	—	1.853	24.571	0.08	1.17%
MOLYBDENUM	X	NR	—	3.500		0.595	NR	—	4.847	—	0.004	—	0.595	12.061	0.05	0.76%
NICKEL	X	NR	—	14.300		2.431	NR	—	15.790	—	0.010	—	2.431	104.666	0.02	0.36%
STRONTIUM	X	NR	—	91.649		15.580	NR	—	59.419	—	0.774	—	15.580	688.177	0.02	0.35%
MANGANESE	X	NR	—	18.571		3.157	NR	—	315.883	—	0.084	—	3.157	230.264	0.01	0.21%
ZINC	X	NR	—	32.779		5.573	NR	—	73.434	—	0.055	—	5.573	418.663	0.01	0.21%
LEAD	X	NR	—	1.532		0.260	NR	—	24.909	—	0.009	—	0.260	20.933	0.01	0.19%
TIN	X	NR	—	3.200		0.544	NR	—	17.600	—	0.030	—	0.544	65.961	0.01	0.13%
TOLUENE	X	NR	—	NR	0.862	0.147	NR	—	0.120	—	0.008	—	0.147	30.220	<0.01	0.08%
NITRATE/NITRITE	X	NR	—	NR		—	10.779	0.043	4.062	—	1.056	—	0.043	34.669	<0.01	0.02%
4 METHYL 2-PENTANONE		NR	—	NR	0.131	0.022	NR	—	ND	—	ND	—	0.022	65.416	<0.01	0.01%
CHROMIUM	X	NR	—	7.413		1.260	NR	—	13.993	—	ND	—	1.260	7161.754	<0.01	<0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	0.014	0.002	NR	—	0.190	—	0.002	—	0.002	21.321	<0.01	<0.01%
TOTAL XYLENES		NR	—	NR	0.001	1.86E-04	NR	—	ND	—	0.004	—	1.86E-04	2.396	<0.01	<0.01%
BUTYL BENZYL PHTHALATE		NR	—	NR	0.020	0.003	NR	—	ND	—	ND	—	0.003	93.349	<0.01	<0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	0.001	1.23E-04	NR	—	0.293	—	ND	—	1.23E-04	11.634	<0.01	<0.01%
PYRENE	X	NR	—	NR	0.005	0.001	NR	—	0.435	—	ND	—	0.001	87.321	<0.01	<0.01%
FLUORANTHENE	X	NR	—	NR	0.004	0.001	NR	—	0.451	—	ND	—	0.001	145.535	<0.01	<0.01%
CHRYSENE	X	NR	—	NR	0.001	1.62E-04	NR	—	0.314	—	ND	—	1.62E-04	116.343	<0.01	<0.01%
PHENANTHRENE	X	NR	—	NR	0.009	0.002	NR	—	0.310	—	ND	—	0.002	1163.433	<0.01	<0.01%
1,1,1-TRICHLOROETHANE		NR	—	NR	0.003	4.92E-04	NR	—	ND	—	ND	—	4.92E-04	1223.894	<0.01	<0.01%

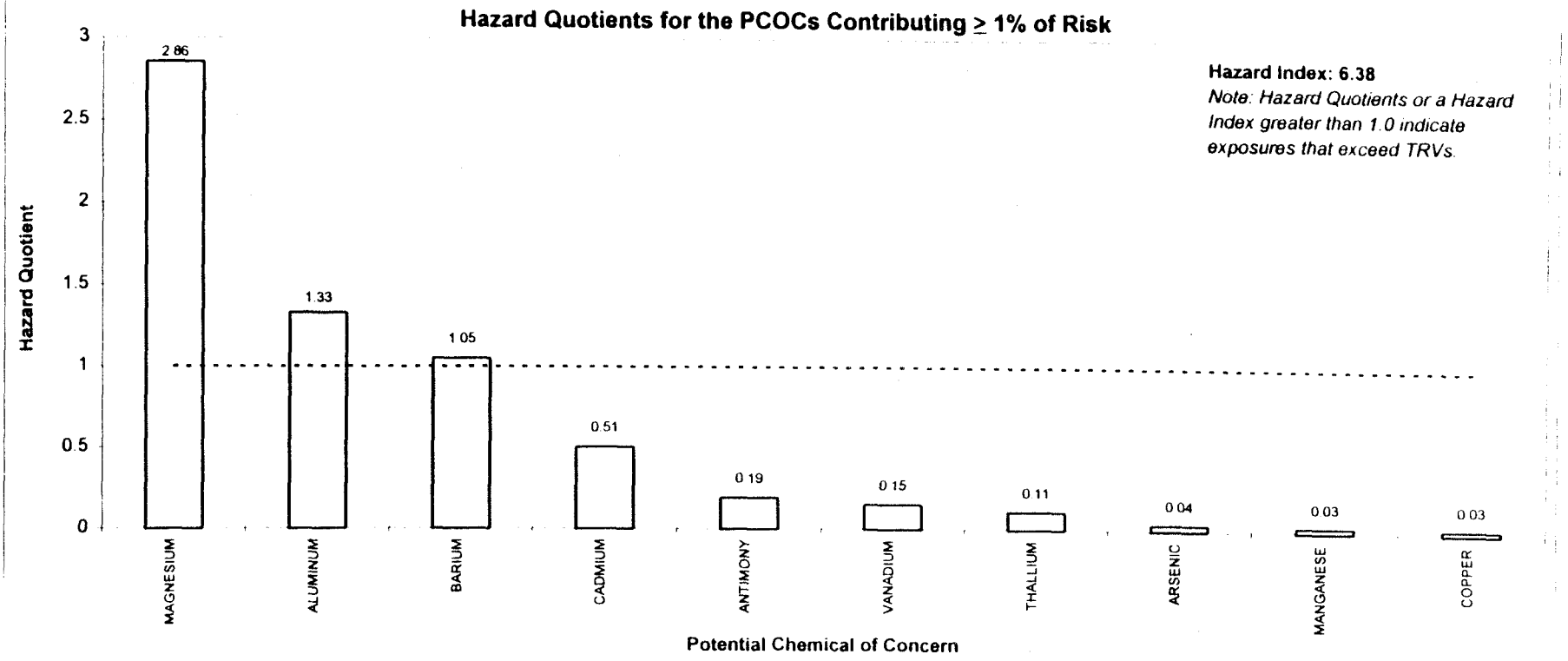
HAZARD INDEX 6.47

Notes:

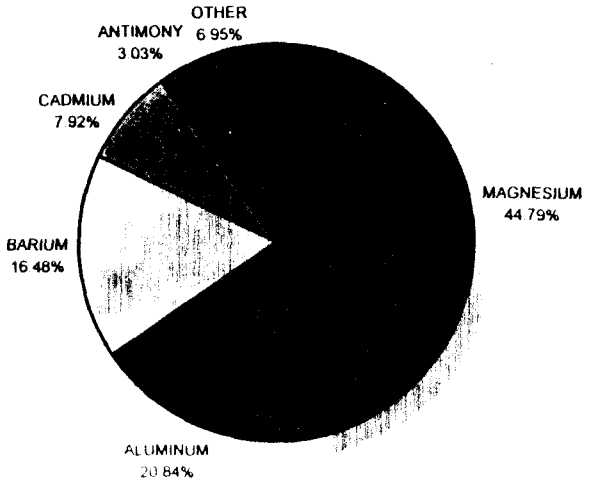
RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{ow} = No octonol-water partition coefficient available; LOG K_{ow}s are used to estimate vegetation uptake of organic compounds by [illegible]paring the relative affinities of a compound for water and octonal (a lipid analog)
Units for inges[illegible]es = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU6 North Spray Field Source Area at RFETS

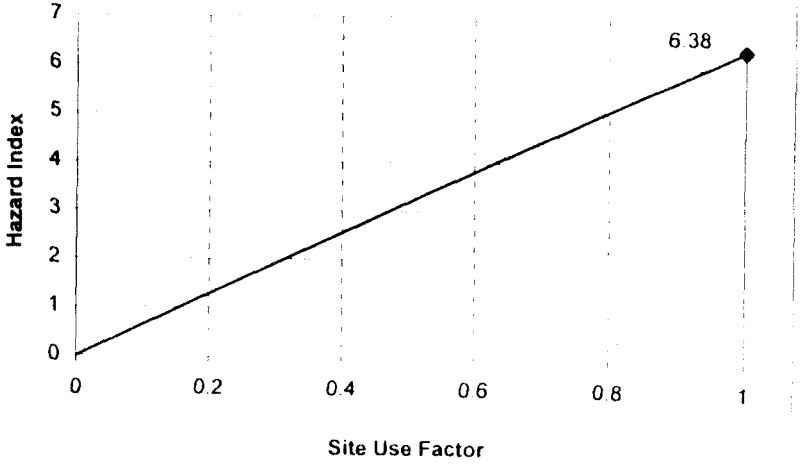
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



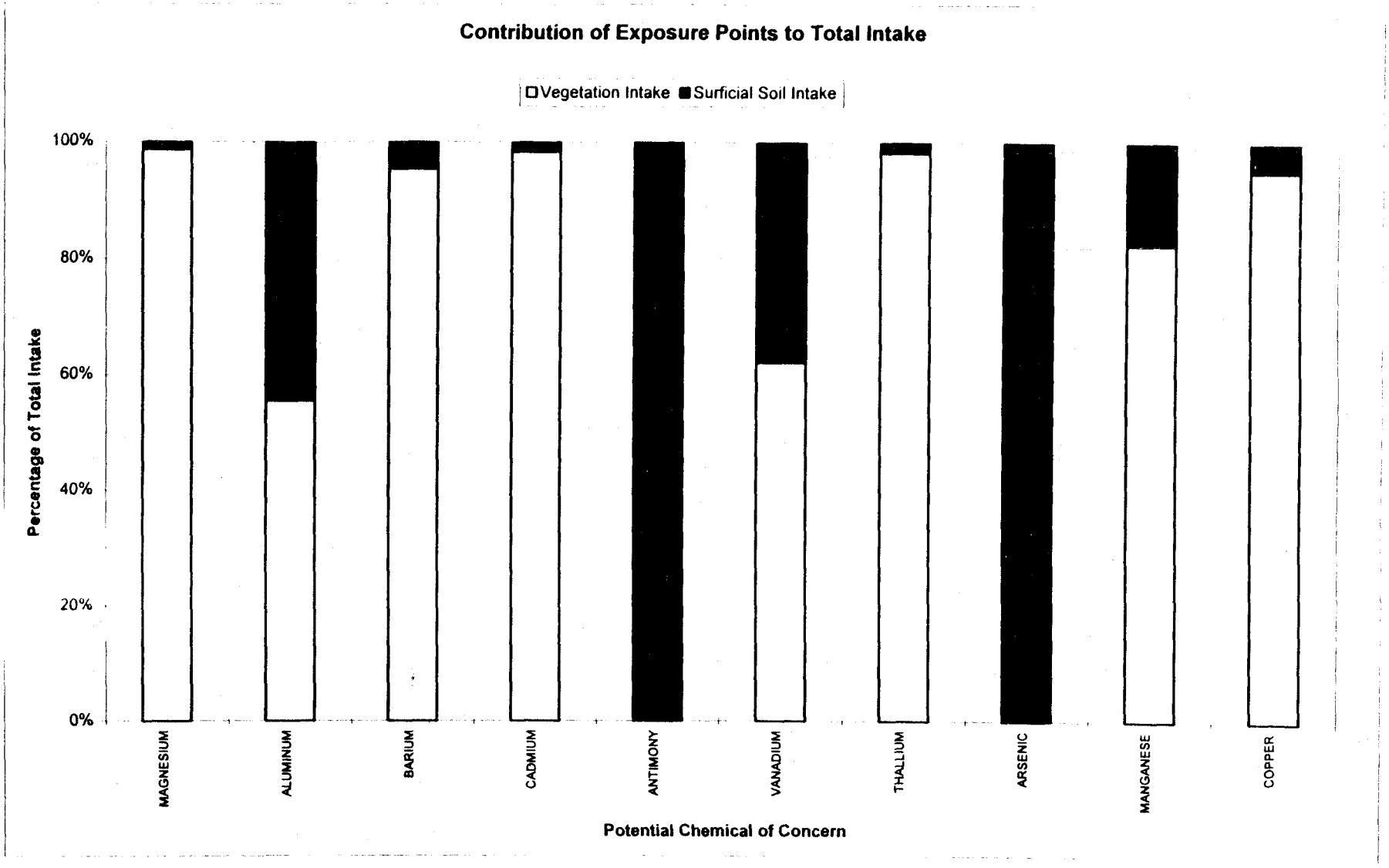
% Contributions of PCOCs to Total Risk



Hazard Index versus Site Use Factor



Summary of Ecotoxicological Risk to Preble's Meadow Jump...g Mice in the OU6 North Spray Field Source Area at RFETS



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU6 North Spray Field Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU6 NORTH SPRAY FIELD		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU6	IR = NR SUF = 1		IR = 0.170 SUF = 1			IR = 0.004 SUF = 1		IR = I SUF = I		IR = I SUF = I					
MAGNESIUM	X	NR	—	4253.480		723.092	2397.398	9.590	NR	—	NR	—	732.681	256.400	2.86	44.79%
ALUMINUM		NR	—	347.535		59.081	11820.163	47.281	NR	—	NR	—	106.362	80.009	1.33	20.84%
BARIUM	X	NR	—	83.888		14.261	170.910	0.684	NR	—	NR	—	14.945	14.217	1.05	16.48%
CADMIUM		NR	—	1.400		0.238	0.990	0.004	NR	—	NR	—	0.242	0.479	0.51	7.92%
ANTIMONY	X	NR	—	ND		—	16.765	0.067	NR	—	NR	—	0.067	0.346	0.19	3.03%
VANADIUM	Y	NR	—	1.300		0.221	33.599	0.134	NR	—	NR	—	0.355	2.313	0.15	2.41%
THALLIUM		NR	—	0.450		0.077	0.340	0.001	NR	—	NR	—	0.078	0.697	0.11	1.75%
ARSENIC	X	NR	—	ND		—	6.579	0.026	NR	—	NR	—	0.026	0.682	0.04	0.60%
MANGANESE	X	NR	—	35.254		5.993	315.526	1.262	NR	—	NR	—	7.255	230.264	0.03	0.49%
COPPER	X	NR	—	6.541		1.112	13.985	0.056	NR	—	NR	—	1.168	43.327	0.03	0.42%
LEAD	X	NR	—	1.764		0.300	40.050	0.160	NR	—	NR	—	0.460	20.933	0.02	0.34%
STRONTIUM	X	NR	—	76.343		12.978	31.283	0.125	NR	—	NR	—	13.104	688.177	0.02	0.30%
MERCURY	X	NR	—	ND		—	0.066	2.65E-04	NR	—	NR	—	2.65E-04	0.017	0.02	0.24%
ZINC	X	NR	—	21.241		3.611	48.942	0.196	NR	—	NR	—	3.807	418.663	0.01	0.14%
SELENIUM		NR	—	ND		—	0.574	0.002	NR	—	NR	—	0.002	0.317	0.01	0.10%
NICKEL	X	NR	—	1.700		0.289	15.387	0.062	NR	—	NR	—	0.351	104.666	<0.01	0.05%
COBALT	X	NR	—	ND		—	9.750	0.039	NR	—	NR	—	0.039	13.192	<0.01	0.05%
BERYLLIUM		NR	—	ND		—	0.686	0.003	NR	—	NR	—	0.003	1.727	<0.01	0.03%
LITHIUM		NR	—	ND		—	6.643	0.027	NR	—	NR	—	0.027	24.571	<0.01	0.02%
NITRATE/NITRITE		NR	—	NR		—	1.000	0.004	NR	—	NR	—	0.004	34.669	<0.01	<0.01%
TOLUENE	X	NR	—	NR	0.003	0.001	NR	—	NR	—	NR	—	0.001	30.220	<0.01	<0.01%
CHROMIUM	X	NR	—	ND		—	13.137	0.053	NR	—	NR	—	0.053	7161.754	<0.01	<0.01%

HAZARD INDEX 6.38

Notes:

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NR = Not reported/analyzed in sample information
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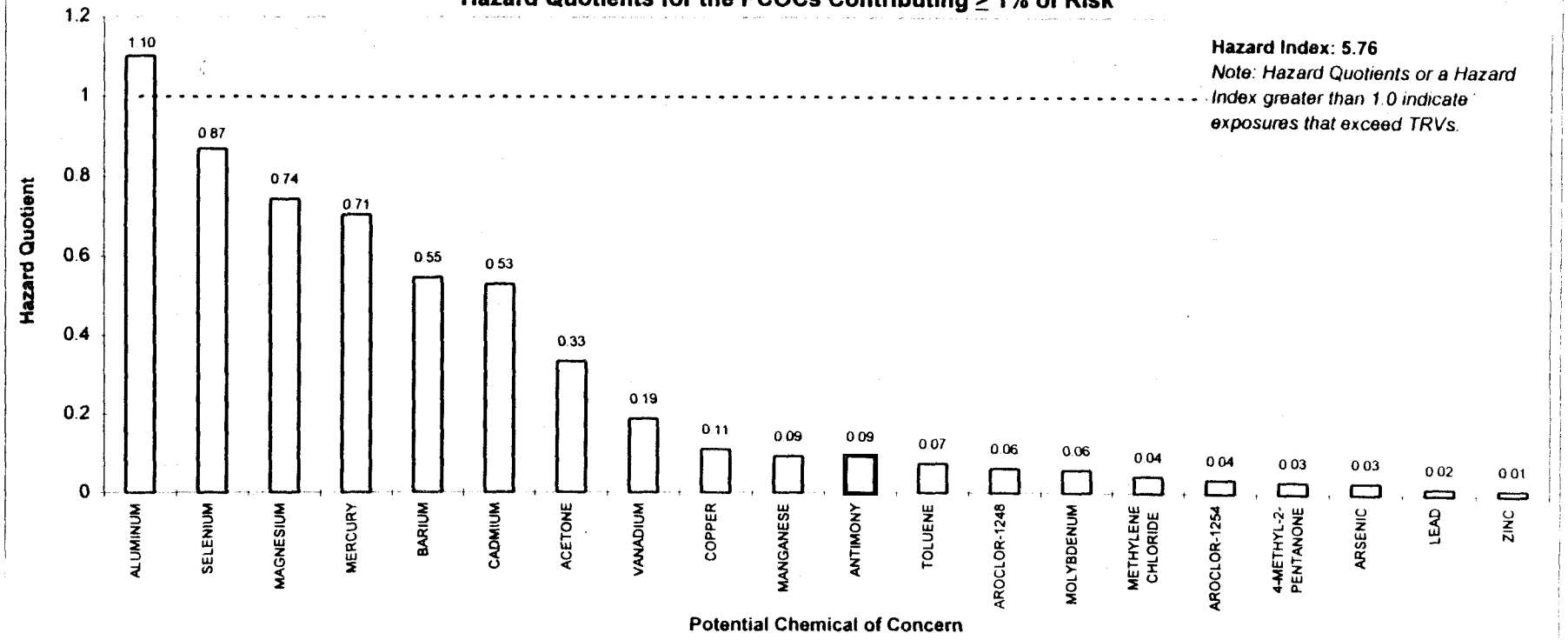
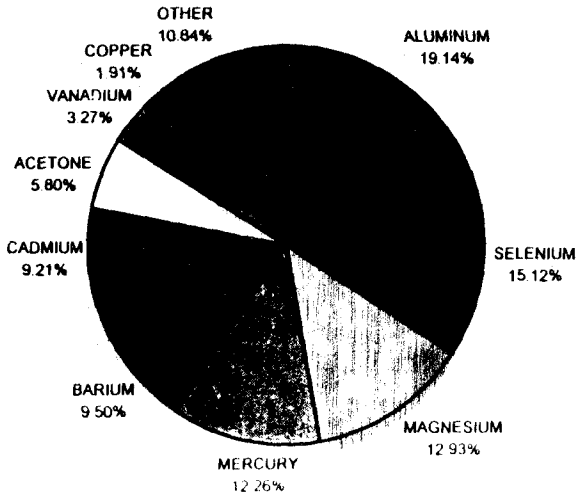
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU2 903 Pad Source Area at RFETS

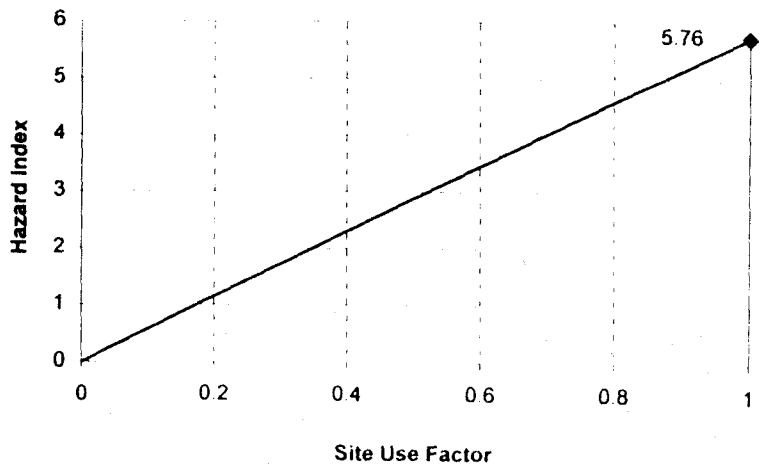
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



% Contributions of PCOCs to Total Risk

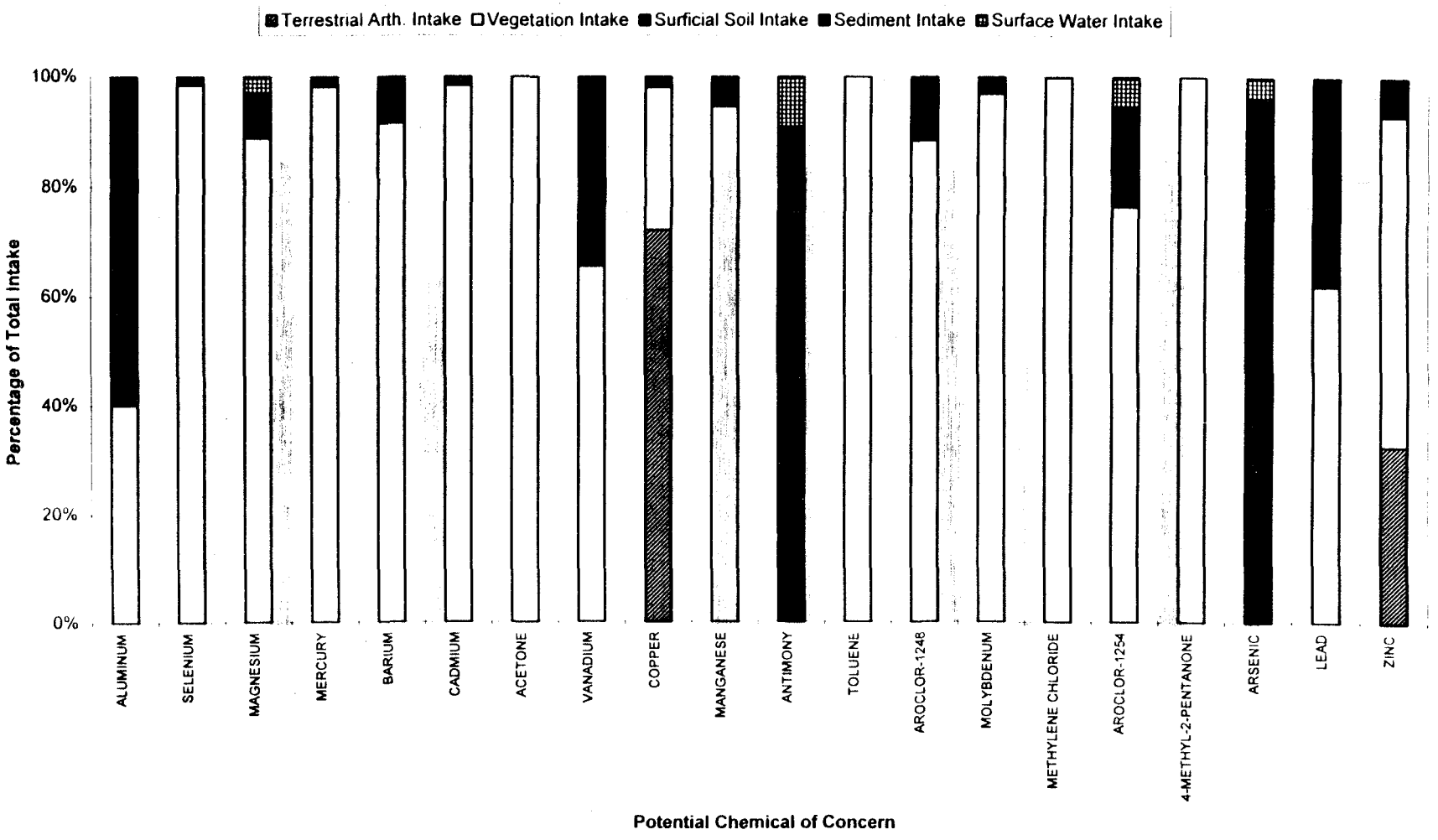


Hazard Index versus Site Use Factor



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU2 903 Pad Source Area at RFETS

Contribution of Exposure Points to Total Intake



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU2 903 Pad Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU2 903 PAD		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte[1]	PCOC for OU2	IR = 0.061 SUF = 1		IR = 0.119 SUF = 1			IR = 0.002 SUF = 1		IR = 0.002 SUF = 1		IR = 0.150 SUF = 1					
ALUMINUM		NR	—	297.170		35.363	11886.180	23.772	14104.468	28.209	5.480	0.822	88.166	80.009	1.10	19.14%
SELENIUM		ND	—	2.288		0.272	0.620	0.001	0.880	0.002	0.008	0.001	0.276	0.317	0.87	15.12%
MAGNESIUM		NR	—	1426.036		169.698	3426.354	6.853	4179.821	8.360	39.934	5.990	190.901	256.400	0.74	12.93%
MERCURY		ND	—	0.098		0.012	0.060	1.20E-04	0.040	8.00E-05	1.14E-04	1.71E-05	0.012	0.017	0.71	12.26%
BARIUM		NR	—	59.791		7.115	143.681	0.287	164.776	0.330	0.261	0.039	7.771	14.217	0.55	9.50%
CADMIUM		ND	—	2.100		0.250	0.920	0.002	0.950	0.002	0.002	3.45E-04	0.254	0.479	0.53	9.21%
ACETONE		NR	—	NR	73.447	8.740	NR	—	0.066	1.32E-04	0.013	0.002	8.742	26.167	0.33	5.80%
VANADIUM		NR	—	2.400		0.286	35.681	0.071	37.422	0.075	0.026	0.004	0.436	2.313	0.19	3.27%
COPPER		67.300	3.432	10.420		1.240	21.815	0.044	23.031	0.046	0.024	0.004	4.766	43.327	0.11	1.91%
MANGANESE		NR	—	169.997		20.230	318.236	0.636	236.041	0.472	0.312	0.047	21.385	230.264	0.09	1.61%
ANTIMONY		NR	—	ND		—	9.800	0.020	4.900	0.010	0.020	0.003	0.032	0.346	0.09	1.61%
TOLUENE		NR	—	NR	18.926	2.252	NR	—	0.002	4.00E-06	ND	—	2.252	30.220	0.07	1.29%
AROCLOR-1248		NR	—	NR	0.027	0.003	0.211	4.22E-04	ND	—	ND	—	0.004	0.064	0.06	1.09%
MOLYBDENUM		NR	—	5.700		0.678	3.000	0.006	6.700	0.013	0.016	0.002	0.700	12.061	0.06	1.01%
METHYLENE CHLORIDE		NR	—	NR	5.553	0.661	NR	—	0.009	1.82E-05	0.004	0.001	0.661	15.307	0.04	0.75%
AROCLOR-1254	X	NR	—	NR	0.033	0.004	0.208	4.17E-04	0.260	0.001	0.002	2.82E-04	0.005	0.142	0.04	0.61%
4-METHYL-2-PENTANONE		NR	—	NR	16.929	2.015	NR	—	0.003	6.00E-06	ND	—	2.015	65.416	0.03	0.54%
ARSENIC		NR	—	ND		—	3.998	0.008	5.742	0.011	0.006	0.001	0.020	0.682	0.03	0.51%
LEAD	X	ND	—	1.789		0.213	32.367	0.065	32.749	0.065	0.007	0.001	0.344	20.933	0.02	0.29%
ZINC		36.600	1.867	29.152		3.469	72.699	0.145	109.953	0.220	0.227	0.034	5.735	418.663	0.01	0.24%
CHLOROFORM		NR	—	NR	3.995	0.475	NR	—	ND	—	0.011	0.002	0.477	39.250	0.01	0.21%
COBALT		NR	—	0.830		0.099	7.671	0.015	9.088	0.018	0.011	0.002	0.134	13.192	0.01	0.18%
STRONTIUM		NR	—	46.852		5.575	43.040	0.086	97.592	0.195	1.028	0.154	6.011	688.177	0.01	0.15%
TIN		NR	—	3.500		0.417	33.323	0.067	18.800	0.038	0.053	0.008	0.529	65.961	0.01	0.14%
LITHIUM		NR	—	1.100		0.131	13.592	0.027	12.183	0.024	0.071	0.011	0.193	24.571	0.01	0.14%
NICKEL		NR	—	4.400		0.524	26.987	0.054	17.615	0.035	0.014	0.002	0.615	104.666	0.01	0.10%
THALLIUM		NR	—	ND		—	0.430	0.001	1.000	0.002	ND	—	0.003	0.697	<0.01	0.07%
NITRATE/NITRITE		NR	—	NR		—	3.106	0.006	4.124	0.008	0.793	0.119	0.133	34.669	<0.01	0.07%
SILVER		ND	—	1.300		0.155	ND	—	1.700	0.003	0.005	0.001	0.159	58.626	<0.01	0.05%
TOTAL XYLENES		NR	—	NR	0.049	0.006	NR	—	ND	—	ND	—	0.006	2.396	<0.01	0.04%
BERYLLIUM		NR	—	ND		—	1.200	0.002	0.903	0.002	0.001	1.89E-04	0.004	1.727	<0.01	0.04%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	0.358	0.043	0.248	4.97E-04	0.540	0.001	ND	—	0.044	21.321	<0.01	0.04%
CHROMIUM	X	131.000	6.681	5.509		0.656	26.789	0.054	14.581	0.029	0.011	0.002	7.421	7161.754	<0.01	0.02%
BENZO(a)PYRENE	X	NR	—	NR	0.005	0.001	0.320	0.001	0.110	2.20E-04	ND	—	0.001	1.163	<0.01	0.01%
TRICHLOROETHENE		NR	—	NR	0.937	0.111	NR	—	ND	—	0.012	0.002	0.113	171.044	<0.01	0.01%
PYRENE	X	NR	—	NR	0.339	0.040	0.644	0.001	0.260	0.001	ND	—	0.042	87.321	<0.01	0.01%
TETRACHLOROETHENE		NR	—	NR	0.035	0.004	NR	—	ND	—	0.006	0.001	0.005	16.300	<0.01	0.01%
FLUORANTHENE	X	NR	—	NR	0.284	0.034	0.689	0.001	0.230	4.60E-04	ND	—	0.036	145.535	<0.01	<0.01%
DIBENZO(a,h)ANTHRACENE		NR	—	NR	ND	—	0.092	1.84E-04	ND	—	ND	—	1.84E-04	1.163	<0.01	<0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	0.004	4.48E-04	0.334	0.001	0.110	2.20E-04	ND	—	0.001	11.634	<0.01	<0.01%

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU2 903 Pad Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU2 903 PAD		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte[1]	PCOC for OU2	IR = 0.051 SUF = 1		IR = 0.119 SUF = 1			IR = 0.002 SUF = 1		IR = 0.002 SUF = 1		IR = 0.150 SUF = 1					
BENZO(b)FLUORANTHENE	X	NR	—	NR	0.001	1.69E-04	0.337	0.001	0.120	2.40E-04	ND	—	0.001	11.634	<0.01	<0.01%
BENZO(k)FLUORANTHENE	X	NR	—	NR	ND	—	0.311	0.001	0.110	2.20E-04	ND	—	0.001	11.634	<0.01	<0.01%
1,2-DICHLOROETHENE		NR	—	NR	0.022	0.003	NR	—	ND	—	0.011	0.002	0.004	52.625	<0.01	<0.01%
PHENANTHRENE	X	NR	—	NR	0.716	0.085	0.556	0.001	0.190	3.80E-04	ND	—	0.087	1163.433	<0.01	<0.01%
2-BUTANONE		NR	—	NR	2.668	0.317	NR	—	0.011	2.26E-05	ND	—	0.317	4672.704	<0.01	<0.01%
BUTYL BENZYL PHTHALATE		NR	—	NR	0.035	0.004	ND	—	ND	—	ND	—	0.004	93.349	<0.01	<0.01%
BENZYL ALCOHOL		NR	—	NR	ND	—	ND	—	ND	—	0.004	0.001	0.001	27.308	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	ND	—	0.188	3.76E-04	ND	—	ND	—	3.76E-04	11.634	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	0.061	0.007	0.353	0.001	0.065	1.30E-04	0.002	3.00E-04	0.008	329.807	<0.01	<0.01%
CHRYSENE	X	NR	—	NR	0.007	0.001	0.341	0.001	0.140	2.80E-04	ND	—	0.002	116.343	<0.01	<0.01%
1,1-DICHLOROETHENE		NR	—	NR	0.010	0.001	NR	—	ND	—	ND	—	0.001	79.154	<0.01	<0.01%
gamma-BHC (LINDANE)		NR	—	NR	ND	—	ND	—	0.004	8.80E-06	ND	—	8.80E-06	0.871	<0.01	<0.01%
4,4'-DDT	X	NR	—	NR	ND	—	ND	—	0.006	1.10E-05	ND	—	1.10E-05	2.094	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	—	NR	ND	—	0.191	3.82E-04	ND	—	ND	—	3.82E-04	116.343	<0.01	<0.01%
FLUORENE		NR	—	NR	ND	—	0.190	3.80E-04	ND	—	ND	—	3.80E-04	145.535	<0.01	<0.01%
ACENAPHTHENE		NR	—	NR	0.010	0.001	0.186	3.72E-04	ND	—	ND	—	0.002	1163.433	<0.01	<0.01%
ANTHRACENE		NR	—	NR	0.009	0.001	0.201	4.01E-04	ND	—	ND	—	0.002	1164.277	<0.01	<0.01%
1,1,1-TRICHLOROETHANE		NR	—	NR	0.014	0.002	NR	—	ND	—	ND	—	0.002	1223.894	<0.01	<0.01%
bis(2-ethylhexyl) PHTHALATE		NR	—	NR	1.40E-05	1.67E-06	ND	—	0.210	4.20E-04	ND	—	4.22E-04	1217.647	<0.01	<0.01%

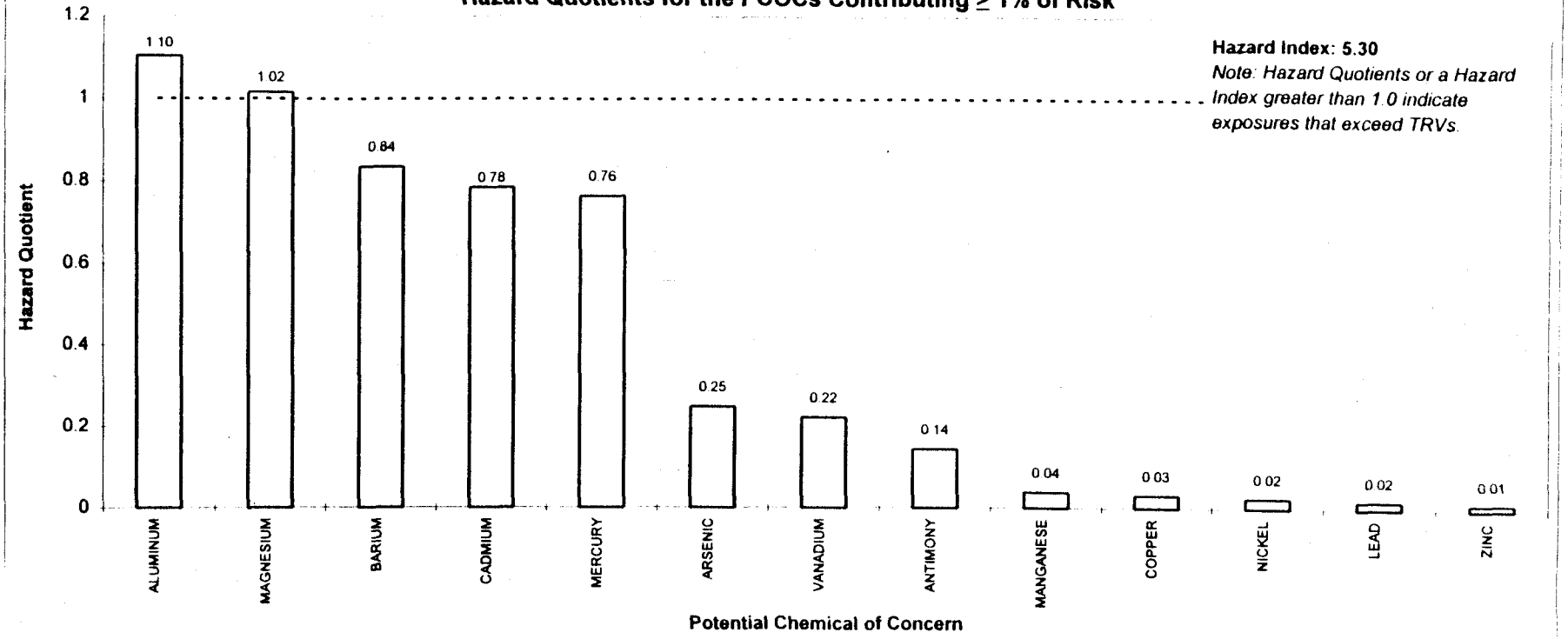
[1] Chromium concentration in terrestrial arthropods is estimated from tissue soil ratios in the East Trenches source area.

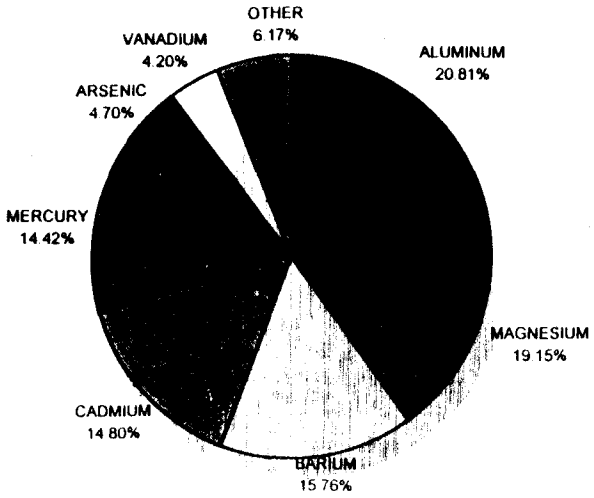
HAZARD INDEX 5.76

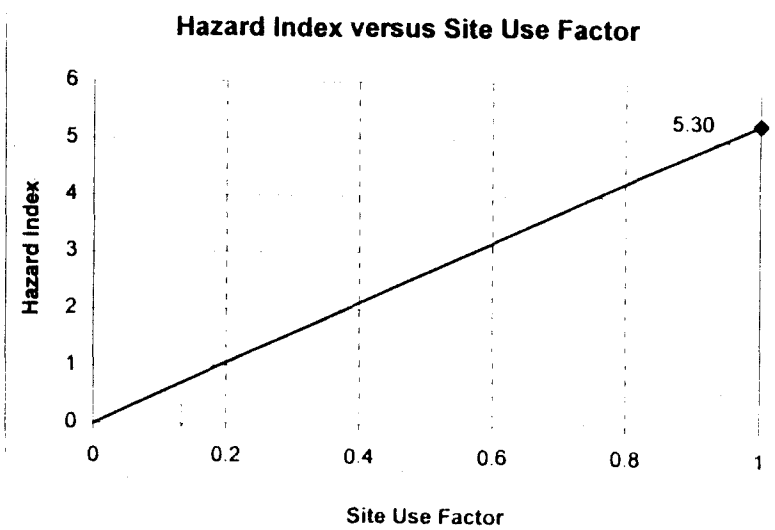
Notes

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{ow} = No octonol-water partition coefficient available; LOG K_{ow}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU5 Ash Pits Source Area at RFETS

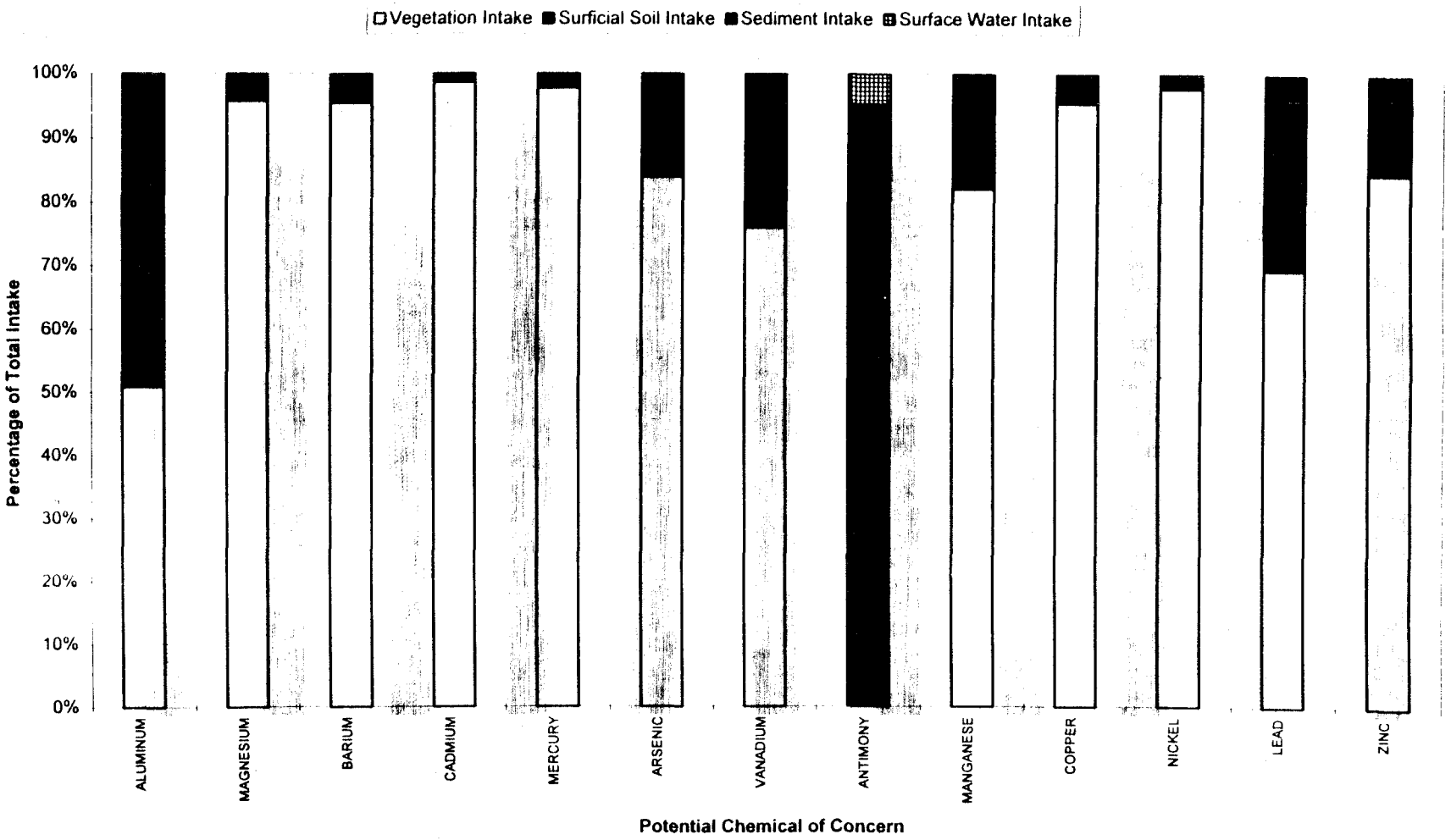






Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU5 Ash Pits Source Area at RFETS

Contribution of Exposure Points to Total Intake



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU5 Ash Pits Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU5 ASH PITS		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU5	IR = NR SUF = 1		IR = 0.170 SUF = 1			IR = 0.002 SUF = 1		IR = 0.002 SUF = 1		IR = 0.150 SUF = 1					
ALUMINUM		NR	—	264.435		44.954	13038.844	26.078	8571.142	17.142	0.855	0.128	88.302	80.009	1.10	20.81%
MAGNESIUM		NR	—	1466.885		249.370	2929.961	5.860	2095.530	4.191	6.862	1.029	260.451	256.400	1.02	19.15%
BARIUM	X	NR	—	66.746		11.347	143.888	0.288	117.818	0.236	0.071	0.011	11.881	14.217	0.84	15.76%
CADMIUM		NR	—	2.179		0.370	1.349	0.003	1.197	0.002	0.001	1.50E-04	0.376	0.479	0.78	14.80%
MERCURY	X	NR	—	0.073		0.012	0.078	1.55E-04	0.056	1.12E-04	1.10E-04	1.65E-05	0.013	0.017	0.76	14.42%
ARSENIC		NR	—	0.840		0.143	5.715	0.011	7.845	0.016	0.002	3.13E-04	0.170	0.682	0.25	4.70%
VANADIUM		NR	—	2.300		0.391	36.213	0.072	25.339	0.051	0.009	0.001	0.515	2.313	0.22	4.20%
ANTIMONY	X	NR	—	ND		—	ND	—	23.639	0.047	0.015	0.002	0.050	0.346	0.14	2.72%
MANGANESE		NR	—	42.730		7.264	337.520	0.675	445.908	0.892	0.148	0.022	8.853	230.264	0.04	0.72%
COPPER	X	NR	—	7.604		1.293	16.938	0.034	13.145	0.026	0.006	0.001	1.354	43.327	0.03	0.59%
NICKEL		NR	—	14.803		2.517	13.578	0.027	14.020	0.028	0.009	0.001	2.573	104.666	0.02	0.46%
LEAD	X	NR	—	1.581		0.269	33.783	0.068	25.470	0.051	0.004	0.001	0.388	20.933	0.02	0.35%
ZINC	X	NR	—	29.216		4.967	69.631	0.139	383.943	0.768	0.018	0.003	5.877	418.663	0.01	0.26%
SELENIUM		NR	—	ND		—	0.410	0.001	1.572	0.003	0.001	1.65E-04	0.004	0.317	0.01	0.24%
STRONTIUM	X	NR	—	45.069		7.662	38.768	0.078	56.300	0.113	0.247	0.037	7.889	688.177	0.01	0.22%
BERYLLIUM		NR	—	0.084		0.014	0.940	0.002	0.969	0.002	0.001	2.05E-04	0.018	1.727	0.01	0.20%
TIN		NR	—	3.200		0.544	16.661	0.033	9.207	0.018	0.019	0.003	0.599	65.961	0.01	0.17%
SILVER	X	NR	—	0.970		0.165	1.807	0.004	2.400	0.005	0.003	4.83E-04	0.174	58.626	<0.01	0.06%
COBALT	X	NR	—	ND		—	8.402	0.017	6.823	0.014	0.007	0.001	0.032	13.192	<0.01	0.05%
THALLIUM		NR	—	ND		—	0.520	0.001	0.280	0.001	ND	—	0.002	0.697	<0.01	0.05%
LITHIUM	X	NR	—	ND		—	10.380	0.021	6.612	0.013	0.009	0.001	0.035	24.571	<0.01	0.03%
NITRATE/NITRITE		NR	—	NR		—	NR	—	16.528	0.033	0.088	0.013	0.046	34.669	<0.01	0.03%
MOLYBDENUM		NR	—	ND		—	0.928	0.002	3.529	0.007	0.020	0.003	0.012	12.061	<0.01	0.02%
ACETONE		NR	—	NR	NR	—	NR	—	1.165	0.002	0.009	0.001	0.004	26.167	<0.01	<0.01%
CHROMIUM		NR	—	1.900		0.323	15.956	0.032	10.564	0.021	0.004	0.001	0.377	7161.754	<0.01	<0.01%
METHYLENE CHLORIDE	X	NR	—	NR	NR	—	NR	—	0.012	2.42E-05	0.005	0.001	0.001	15.307	<0.01	<0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	NR	—	NR	—	0.410	0.001	0.001	1.50E-04	0.001	21.321	<0.01	<0.01%
1,2-DICHLOROETHANE		NR	—	NR	NR	—	NR	—	ND	—	0.003	4.61E-04	4.61E-04	61.195	<0.01	<0.01%
CHLOROFORM		NR	—	NR	NR	—	NR	—	0.003	6.00E-06	ND	—	6.00E-06	39.250	<0.01	<0.01%
2-BUTANONE		NR	—	NR	NR	—	NR	—	0.305	0.001	ND	—	0.001	4672.704	<0.01	<0.01%

HAZARD INDEX 5.30

Notes:

RFETS = Rocky Flats Environmental Technology Site
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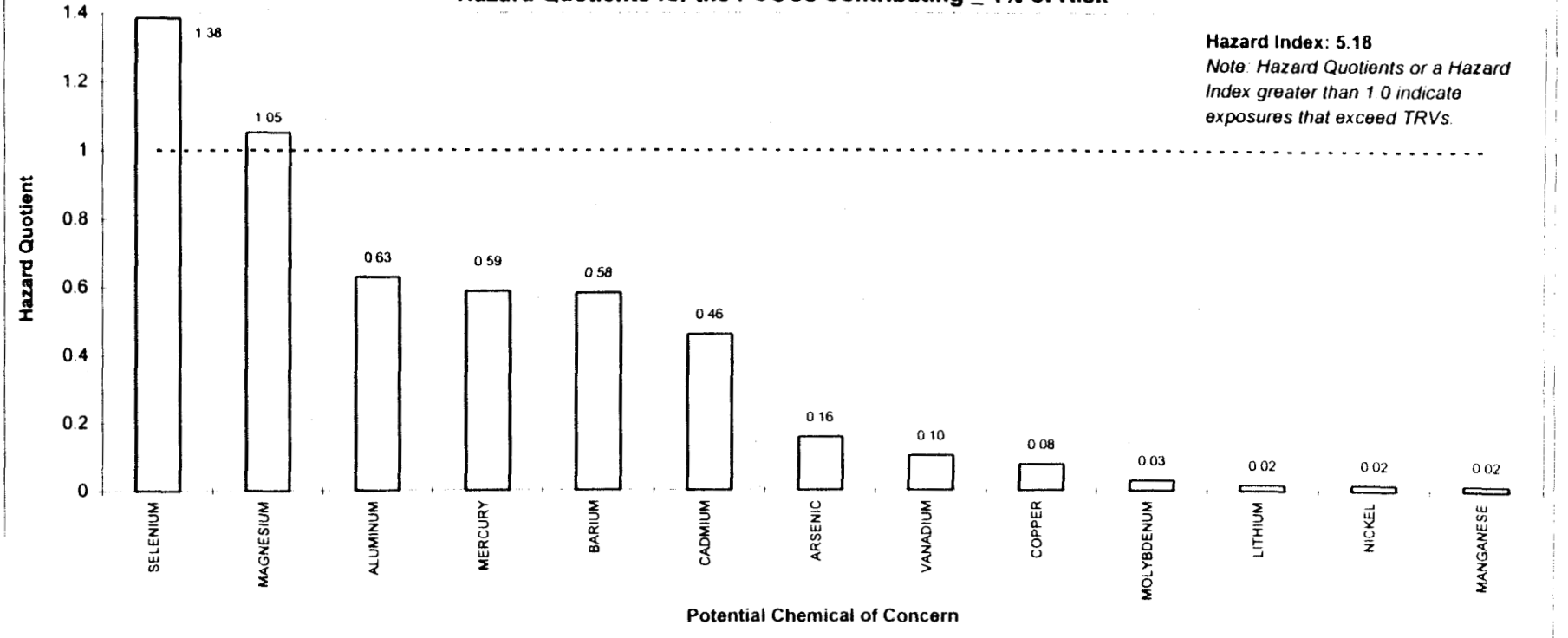
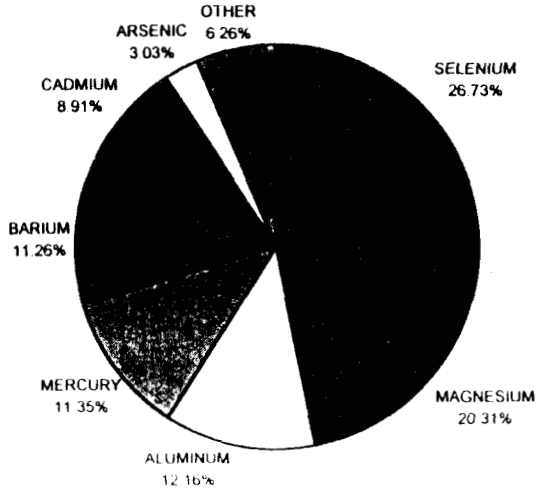
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU6 Burial Trenches Source Area at RFETS

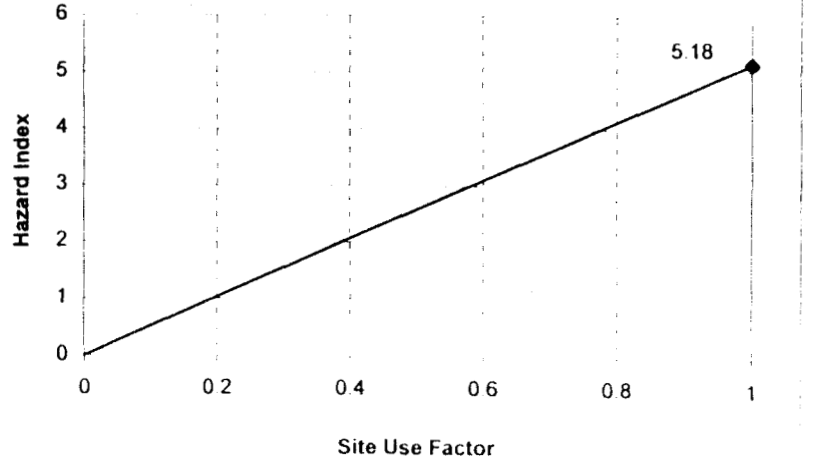
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



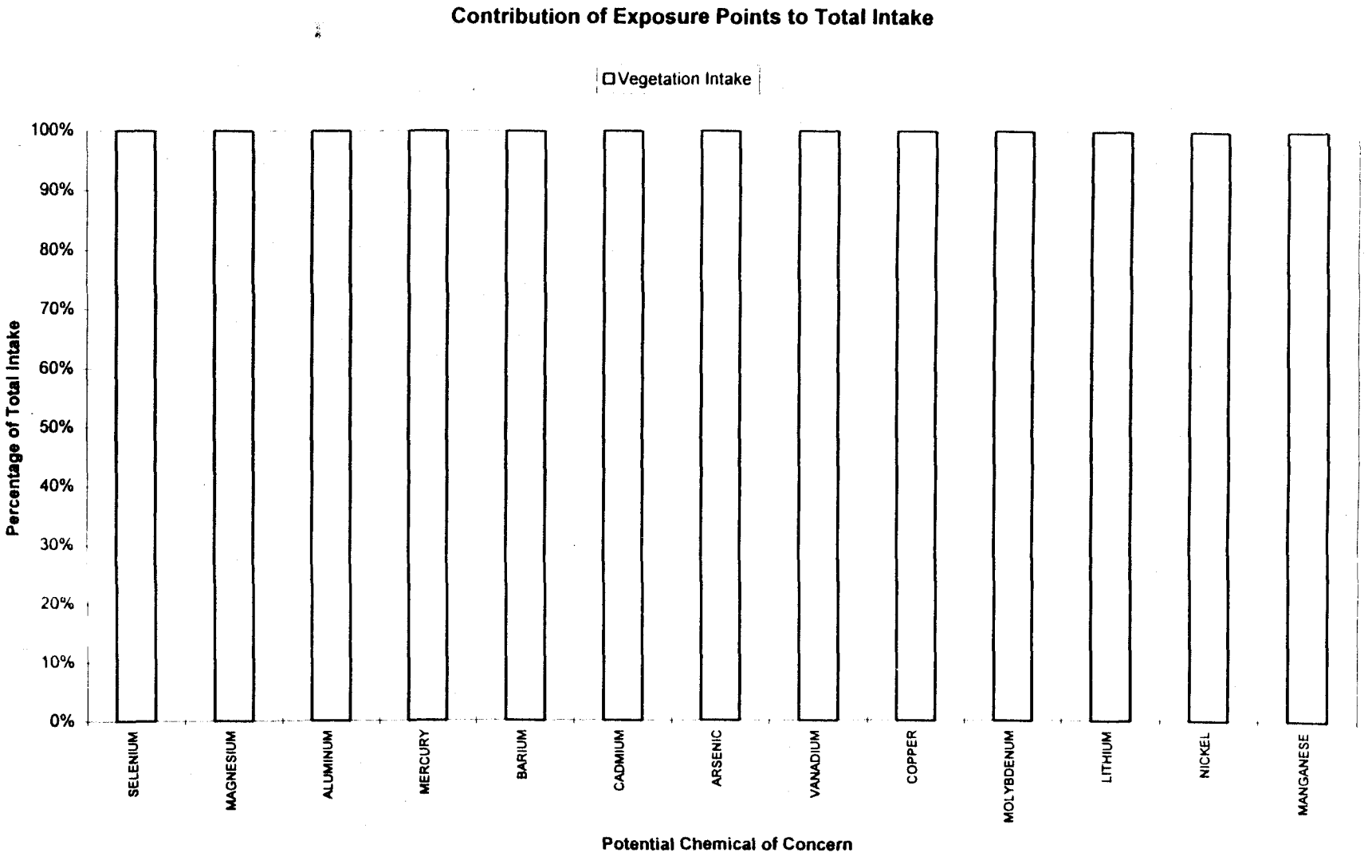
% Contributions of PCOCs to Total Risk



Hazard Index versus Site Use Factor



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU6 Burial Trenches Source Area at RFETS



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU6 Burial Trenches Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU6 BURIAL TRENCHES		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU6	IR = NR SUF = 1		IR = 0.170 SUF = 1			IR = 0.004 SUF = 1		IR = I SUF = I		IR = I SUF = I					
SELENIUM		NR	—	2.580		0.439	NR	—	NR	—	NR	—	0.439	0.317	1.38	26.73%
MAGNESIUM	X	NR	—	1586.864		269.767	NR	—	NR	—	NR	—	269.767	256.400	1.05	20.31%
ALUMINUM		NR	—	296.486		50.403	NR	—	NR	—	NR	—	50.403	80.009	0.63	12.16%
MERCURY	X	NR	—	0.058		0.010	NR	—	NR	—	NR	—	0.010	0.017	0.59	11.35%
BARIUM	X	NR	—	48.775		8.292	NR	—	NR	—	NR	—	8.292	14.217	0.58	11.26%
CADMIUM		NR	—	1.300		0.221	NR	—	NR	—	NR	—	0.221	0.479	0.46	8.91%
ARSENIC	X	NR	—	0.630		0.107	NR	—	NR	—	NR	—	0.107	0.682	0.16	3.03%
VANADIUM	X	NR	—	1.400		0.238	NR	—	NR	—	NR	—	0.238	2.313	0.10	1.99%
COPPER	X	NR	—	19.589		3.330	NR	—	NR	—	NR	—	3.330	43.327	0.08	1.48%
MOLYBDENUM	X	NR	—	2.100		0.357	NR	—	NR	—	NR	—	0.357	12.061	0.03	0.57%
LITHIUM		NR	—	2.500		0.425	NR	—	NR	—	NR	—	0.425	24.571	0.02	0.33%
NICKEL	X	NR	—	10.500		1.785	NR	—	NR	—	NR	—	1.785	104.666	0.02	0.33%
MANGANESE	X	NR	—	21.320		3.624	NR	—	NR	—	NR	—	3.624	230.264	0.02	0.30%
BERYLLIUM		NR	—	0.130		0.022	NR	—	NR	—	NR	—	0.022	1.727	0.01	0.25%
STRONTIUM	X	NR	—	50.056		8.509	NR	—	NR	—	NR	—	8.509	688.177	0.01	0.24%
ZINC	X	NR	—	26.858		4.566	NR	—	NR	—	NR	—	4.566	418.663	0.01	0.21%
LEAD	X	NR	—	1.183		0.201	NR	—	NR	—	NR	—	0.201	20.933	0.01	0.19%
TIN		NR	—	2.900		0.493	NR	—	NR	—	NR	—	0.493	65.961	0.01	0.14%
ACETONE	X	NR	—	NR	1.066	0.181	NR	—	NR	—	NR	—	0.181	26.167	0.01	0.13%
METHYLENE CHLORIDE	X	NR	—	NR	0.371	0.063	NR	—	NR	—	NR	—	0.063	15.307	<0.01	0.08%
TOLUENE	X	NR	—	NR	0.089	0.015	NR	—	NR	—	NR	—	0.015	30.220	<0.01	0.01%
2-BUTANONE	X	NR	—	NR	2.157	0.367	NR	—	NR	—	NR	—	0.367	4672.704	<0.01	<0.01%
4-METHYL-2-PENTANONE	X	NR	—	NR	0.018	0.003	NR	—	NR	—	NR	—	0.003	65.416	<0.01	<0.01%
CHROMIUM	X	NR	—	1.600		0.272	NR	—	NR	—	NR	—	0.272	7161.754	<0.01	<0.01%
TRICHLOROETHENE	X	NR	—	NR	0.028	0.005	NR	—	NR	—	NR	—	0.005	171.044	<0.01	<0.01%
CHLOROFORM	X	NR	—	NR	0.006	0.001	NR	—	NR	—	NR	—	0.001	39.250	<0.01	<0.01%
BENZENE	X	NR	—	NR	0.002	—	NR	—	NR	—	NR	—	3.92E-04	30.662	<0.01	<0.01%

HAZARD INDEX 5.18

Notes:

RFETS = Rocky Flats Environmental Technology Site
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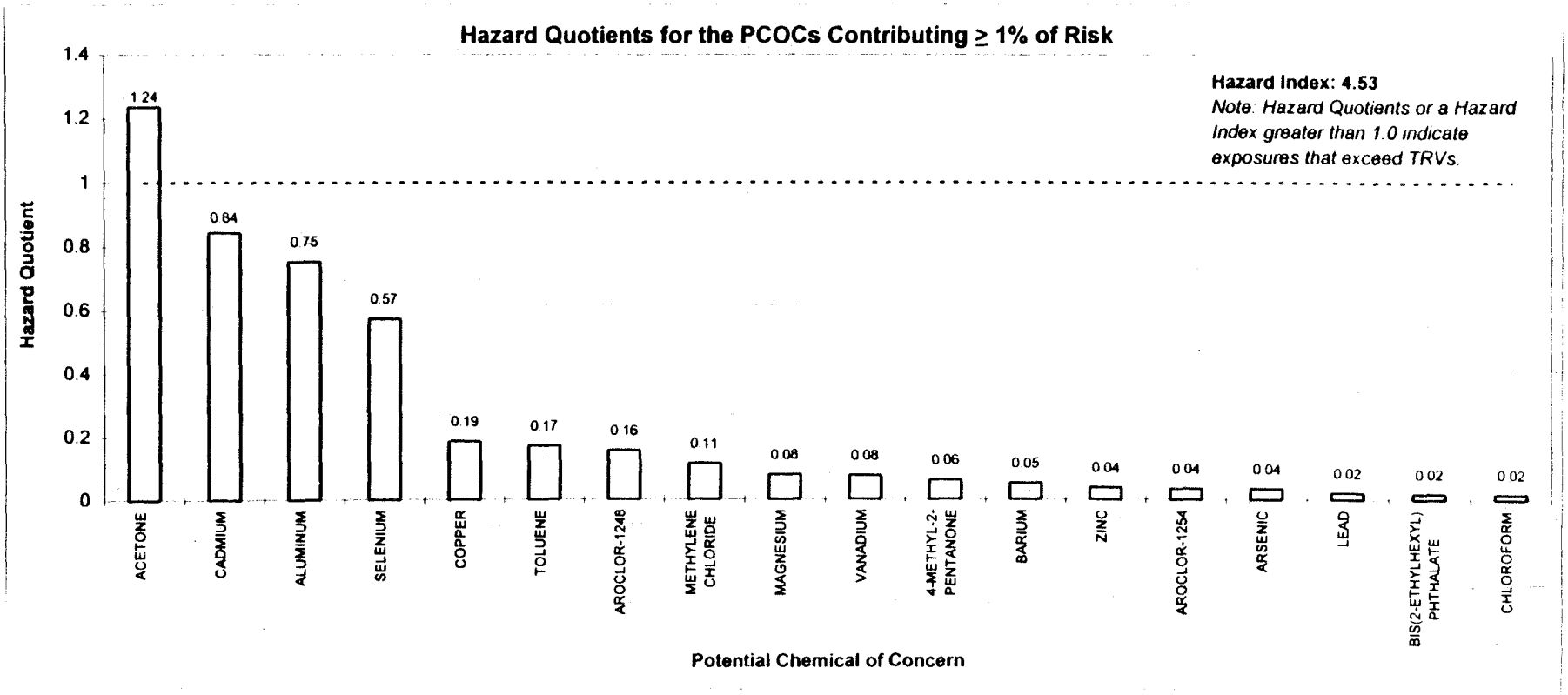
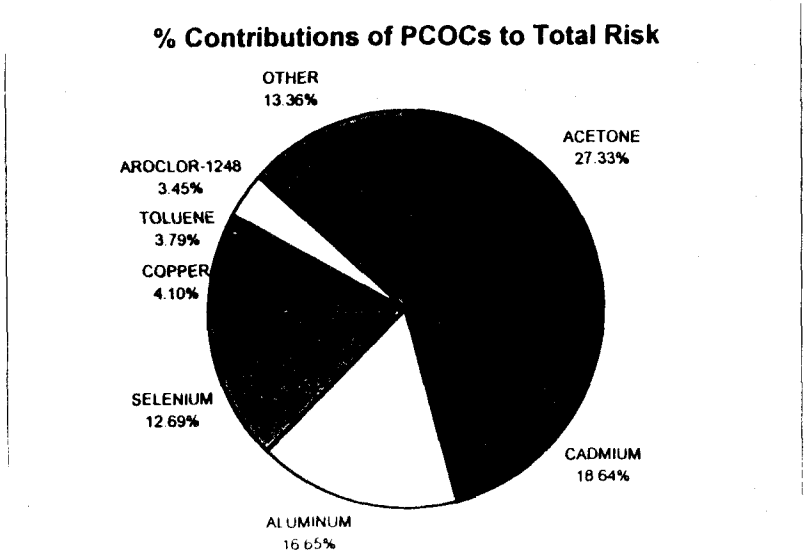
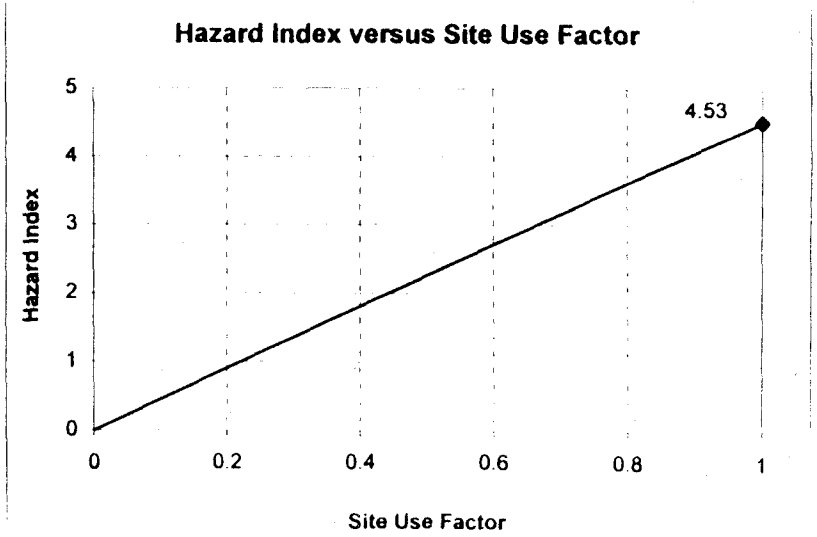
Units for ingestion rates = kg/kg/day units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU1 881 Hillside Source Area at RFETS

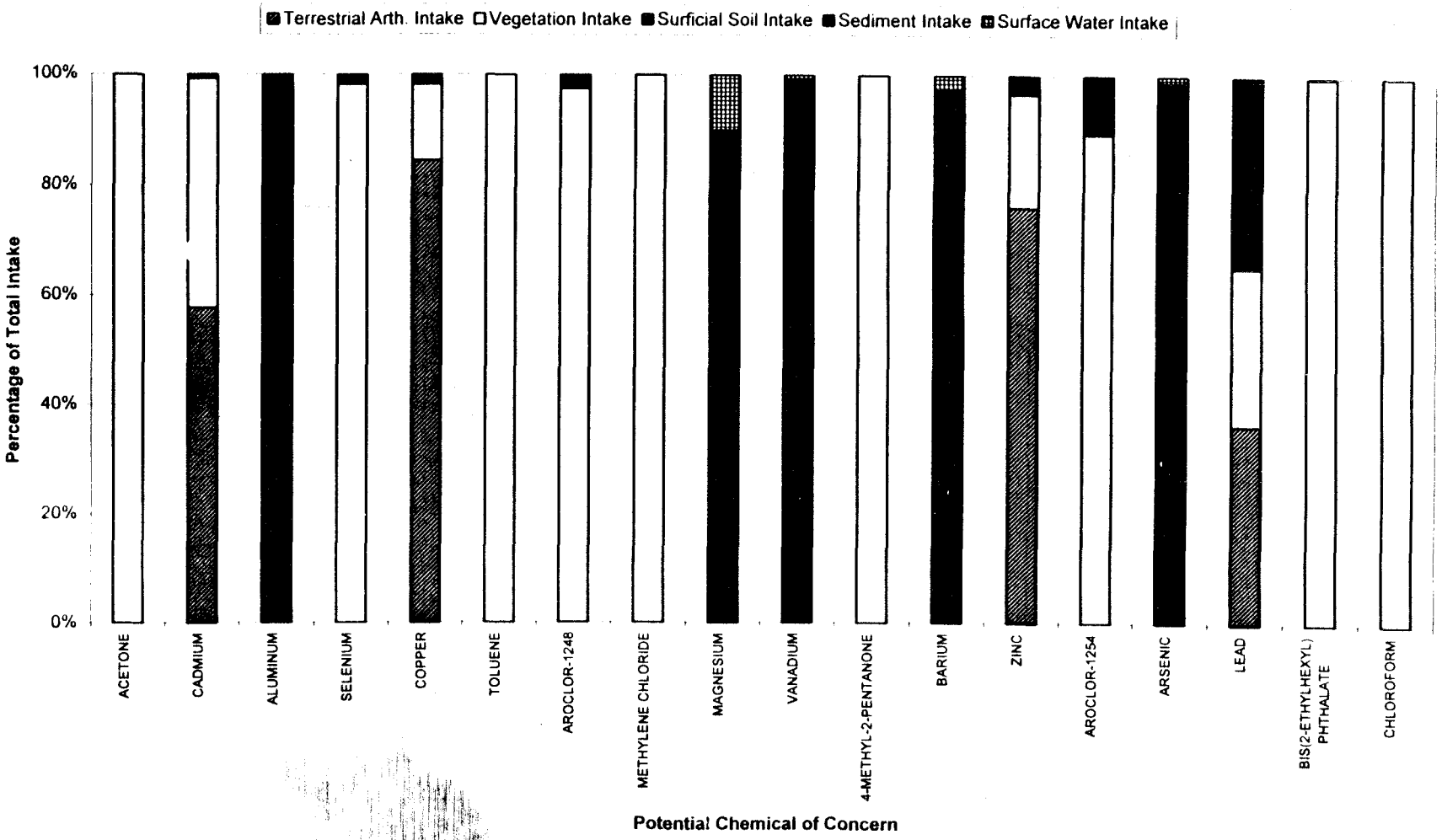






Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU1 881 Hillside Source Area at RFETS

Contribution of Exposure Points to Total Intake



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU1 881 Hillside Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU1 881 HILLSIDE		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU1	IR = 0.051 SUF = 1		IR = 0.119 SUF = 1			IR = 0.002 SUF = 1		IR = 0.002 SUF = 1		IR = 0.150 SUF = 1					
ACETONE		NR	—	NR	271.965	32.364	NR	—	0.036	7.20E-05	0.007	0.001	32.365	26.167	1.24	27.33%
CADMIUM		4.567	0.233	1.409		0.168	0.611	0.001	0.827	0.002	0.002	2.41E-04	0.404	0.479	0.84	18.64%
ALUMINUM		NR	—	NR		—	14308.320	28.617	15760.019	31.520	0.926	0.139	60.276	80.009	0.75	16.65%
SELENIUM		ND	—	1.500		0.179	0.511	0.001	0.919	0.002	0.002	2.93E-04	0.182	0.317	0.57	12.69%
COPPER		133.000	6.783	9.256		1.101	35.484	0.071	36.368	0.073	0.009	0.001	8.030	43.327	0.19	4.10%
TOLUENE	X	NR	—	NR	43.577	5.186	NR	—	0.005	1.00E-05	0.003	3.95E-04	5.186	30.220	0.17	3.79%
AROCLOR-1248	X	NR	—	NR	0.082	0.010	0.123	2.47E-04	ND	—	ND	—	0.010	0.064	0.16	3.45%
METHYLENE CHLORIDE		NR	—	NR	14.721	1.752	NR	—	ND	—	0.004	0.001	1.752	15.307	0.11	2.53%
MAGNESIUM		NR	—	NR		—	3418.568	6.837	5670.202	11.340	13.583	2.037	20.215	256.400	0.08	1.74%
VANADIUM		NR	—	NR		—	41.858	0.084	44.881	0.090	0.009	0.001	0.175	2.313	0.08	1.67%
4-METHYL-2-PENTANONE		NR	—	NR	33.985	4.044	NR	—	ND	—	ND	—	4.044	65.416	0.06	1.37%
BARIUM		NR	—	NR		—	179.137	0.358	180.333	0.361	0.123	0.018	0.737	14.217	0.05	1.15%
ZINC		242.000	12.342	28.068		3.340	85.548	0.171	186.114	0.372	0.051	0.008	16.233	418.663	0.04	0.86%
AROCLOR-1254	X	NR	—	NR	0.037	0.004	0.257	0.001	ND	—	ND	—	0.005	0.142	0.04	0.78%
ARSENIC		NR	—	NR		—	5.377	0.011	6.464	0.013	0.002	3.06E-04	0.024	0.682	0.04	0.78%
LEAD		3.258	0.166	1.100		0.131	48.003	0.096	30.594	0.061	0.003	0.001	0.455	20.933	0.02	0.48%
BIS(2-ETHYLHEXYL) PHTHALATE		NR	—	NR	3.395	0.404	ND	—	0.280	0.001	0.002	3.00E-04	0.405	21.321	0.02	0.42%
CHLOROFORM		NR	—	NR	5.967	0.710	NR	—	ND	—	ND	—	0.710	39.250	0.02	0.40%
NITRATE/NITRITE		NR	—	NR		—	2.111	0.004	6.793	0.014	2.624	0.394	0.411	34.669	0.01	0.26%
MERCURY		ND	—	ND		—	0.054	1.08E-04	ND	—	1.18E-04	1.77E-05	1.25E-04	0.017	0.01	0.16%
ANTIMONY		NR	—	NR		—	ND	—	ND	—	0.015	0.002	0.002	0.346	0.01	0.13%
MANGANESE		NR	—	NR		—	312.554	0.625	335.402	0.671	0.063	0.009	1.305	230.264	0.01	0.13%
2-BUTANONE		NR	—	NR	119.240	14.190	NR	—	0.011	2.20E-05	0.005	0.001	14.190	4672.704	<0.01	0.07%
COBALT		NR	—	NR		—	8.343	0.017	11.094	0.022	0.007	0.001	0.040	13.192	<0.01	0.07%
PYRENE	X	NR	—	NR	2.156	0.257	0.693	0.001	0.310	0.001	ND	—	0.259	87.321	<0.01	0.07%
BERYLLIUM		NR	—	NR		—	1.257	0.003	0.809	0.002	0.001	1.36E-04	0.004	1.727	<0.01	0.05%
LITHIUM		NR	—	NR		—	9.473	0.019	10.000	0.020	0.021	0.003	0.042	24.571	<0.01	0.04%
FLUORANTHENE	X	NR	—	NR	1.763	0.210	0.762	0.002	0.380	0.001	ND	—	0.212	145.535	<0.01	0.03%
THALLIUM		NR	—	NR		—	0.510	0.001	ND	—	0.002	2.95E-04	0.001	0.697	<0.01	0.03%
TIN		NR	—	NR		—	43.094	0.086	ND	—	0.024	0.004	0.090	65.961	<0.01	0.03%
SILVER		ND	—	0.540		0.064	ND	—	ND	—	0.003	0.001	0.065	58.626	<0.01	0.02%
BENZO(a)PYRENE	X	NR	—	NR	0.006	0.001	0.311	0.001	ND	—	ND	—	0.001	1.163	<0.01	0.02%
NICKEL		NR	—	NR		—	29.863	0.060	14.200	0.028	0.008	0.001	0.089	104.666	<0.01	0.02%
STRONTIUM		NR	—	NR		—	61.651	0.123	121.257	0.243	0.413	0.062	0.428	688.177	<0.01	0.01%
MOLYBDENUM		NR	—	NR		—	1.926	0.004	ND	—	0.018	0.003	0.006	12.061	<0.01	0.01%
PHENANTHRENE	X	NR	—	NR	4.472	0.532	0.559	0.001	0.190	3.80E-04	ND	—	0.534	1163.433	<0.01	0.01%
PENTACHLOROPHENOL		NR	—	NR	0.019	0.002	ND	—	ND	—	ND	—	0.002	7.915	<0.01	0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	0.008	0.001	0.327	0.001	ND	—	ND	—	0.002	11.634	<0.01	<0.01%
DIBENZO(a,h)ANTHRACENE	X	NR	—	NR	ND	—	0.092	1.84E-04	ND	—	ND	—	1.84E-04	1.163	<0.01	<0.01%
TOTAL XYLENES	X	NR	—	NR	0.002	1.96E-04	NR	—	ND	—	0.001	1.50E-04	3.46E-04	2.396	<0.01	<0.01%
TRICHLOROETHENE	X	NR	—	NR	0.187	0.022	NR	—	ND	—	0.003	3.88E-04	0.023	171.044	<0.01	<0.01%

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU1 881 Hillside Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU1 881 HILLSIDE		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU1	IR = 0.061 SUF = 1		IR = 0.119 SUF = 1			IR = 0.002 SUF = 1		IR = 0.002 SUF = 1		IR = 0.150 SUF = 1					
TETRACHLOROETHENE	X	NR	—	NR	0.015	0.002	NR	—	ND	—	0.003	4.23E-04	0.002	16.300	<0.01	<0.01%
CHROMIUM		ND	—	5.535		0.659	34.997	0.070	23.900	0.048	0.004	0.001	0.777	7161.754	<0.01	<0.01%
BENZO(b)FLUORANTHENE	X	NR	—	NR	0.002	2.87E-04	0.314	0.001	0.190	3.80E-04	ND	—	0.001	11.634	<0.01	<0.01%
BENZO(k)FLUORANTHENE	X	NR	—	NR	0.002	2.33E-04	0.297	0.001	0.110	2.20E-04	ND	—	0.001	11.634	<0.01	<0.01%
1,2-DICHLOROETHANE	X	NR	—	NR	0.027	0.003	NR	—	ND	—	0.003	3.99E-04	0.004	61.195	<0.01	<0.01%
1,1-DICHLOROETHENE	X	NR	—	NR	0.040	0.005	NR	—	ND	—	0.003	3.80E-04	0.005	79.154	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	ND	—	0.204	4.07E-04	ND	—	ND	—	4.07E-04	11.634	<0.01	<0.01%
FLUORENE	X	NR	—	NR	0.028	0.003	0.193	3.86E-04	ND	—	ND	—	0.004	145.535	<0.01	<0.01%
CHRYSENE	X	NR	—	NR	0.012	0.001	0.361	0.001	0.190	3.80E-04	ND	—	0.003	116.343	<0.01	<0.01%
DI-n-BUTYL PHTHALATE		NR	—	NR	0.056	0.007	ND	—	ND	—	ND	—	0.007	329.807	<0.01	<0.01%
BENZYL ALCOHOL		NR	—	NR	ND	—	0.203	4.06E-04	ND	—	ND	—	4.06E-04	27.308	<0.01	<0.01%
1,2-DICHLOROETHENE	X	NR	—	NR	ND	—	NR	—	ND	—	0.002	3.00E-04	3.00E-04	52.625	<0.01	<0.01%
ACENAPHTHENE	X	NR	—	NR	0.040	0.005	0.195	3.90E-04	ND	—	ND	—	0.005	1163.433	<0.01	<0.01%
NAPHTHALENE	X	NR	—	NR	0.040	0.005	0.110	2.20E-04	ND	—	ND	—	0.005	1163.433	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	—	NR	ND	—	0.205	4.10E-04	ND	—	ND	—	4.10E-04	116.343	<0.01	<0.01%
ANTHRACENE	X	NR	—	NR	0.027	0.003	0.202	4.05E-04	ND	—	ND	—	0.004	1164.277	<0.01	<0.01%
ALDRIN		NR	—	NR	ND	—	ND	—	ND	—	1.00E-05	1.50E-06	1.50E-06	0.523	<0.01	<0.01%
1,1-DICHLOROETHANE	X	NR	—	NR	ND	—	NR	—	ND	—	0.003	3.77E-04	3.77E-04	303.422	<0.01	<0.01%
DI-n-OCTYL PHTHALATE		NR	—	NR	0.009	0.001	ND	—	ND	—	ND	—	0.001	1217.647	<0.01	<0.01%
1,1,1-TRICHLOROETHANE	X	NR	—	NR	0.007	0.001	NR	—	ND	—	0.003	3.77E-04	0.001	1223.894	<0.01	<0.01%

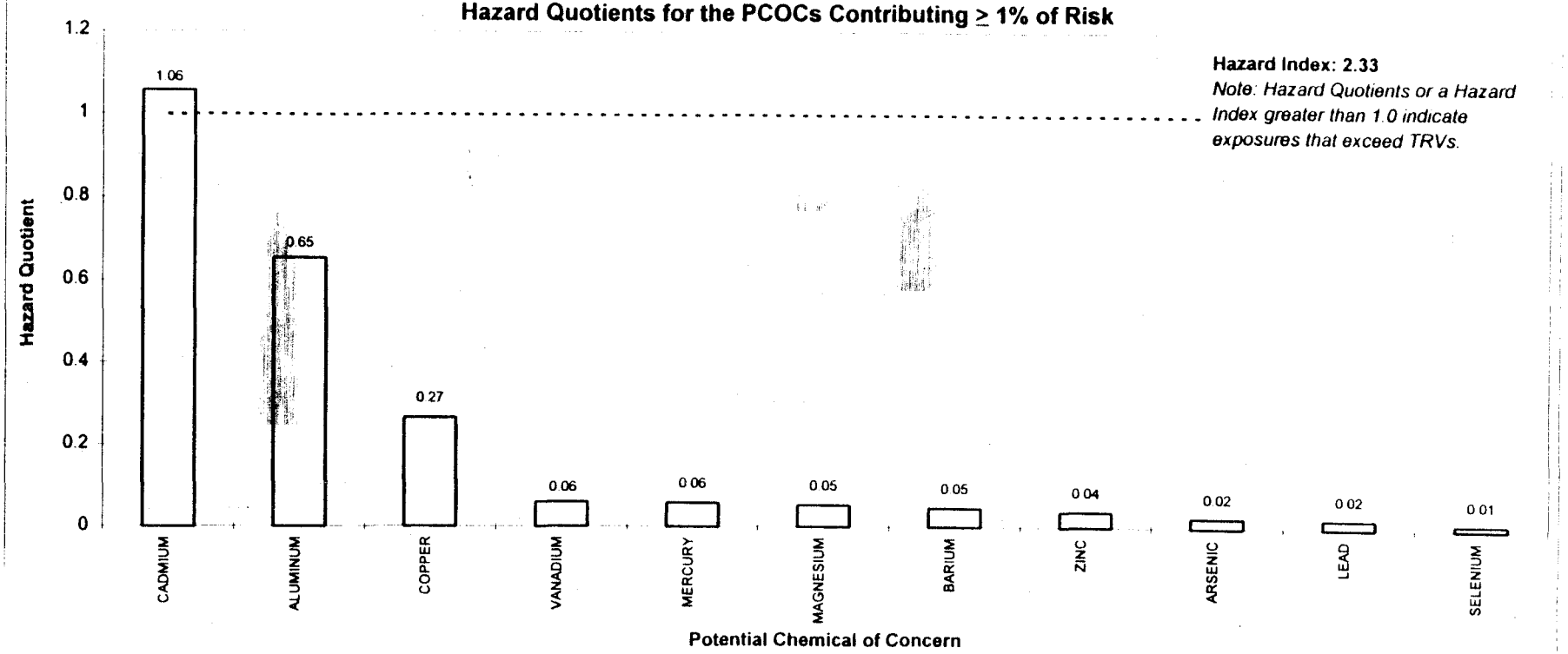
HAZARD INDEX 4.53

Notes:

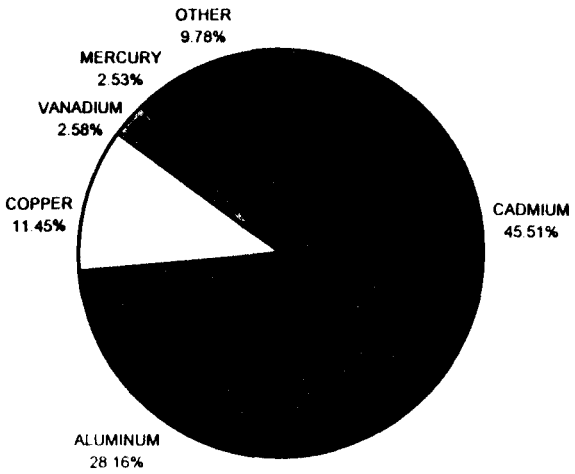
RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{ow} = No octonol-water partition coefficient available; LOG K_{ow}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU5 C-Ponds Source Area at RFETS

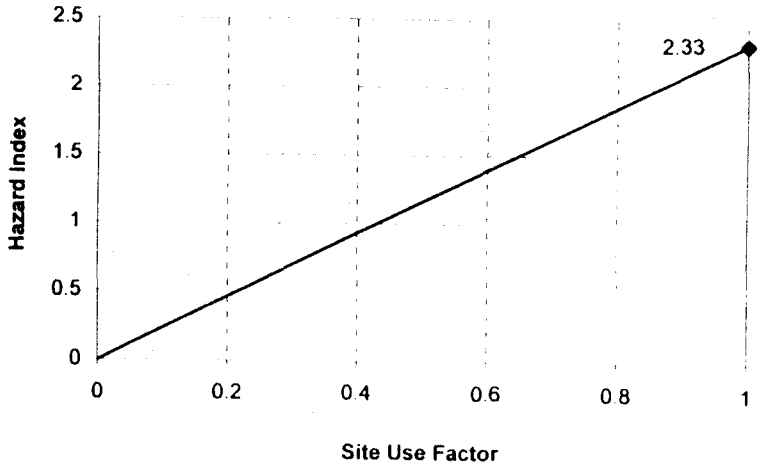
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



% Contributions of PCOCs to Total Risk

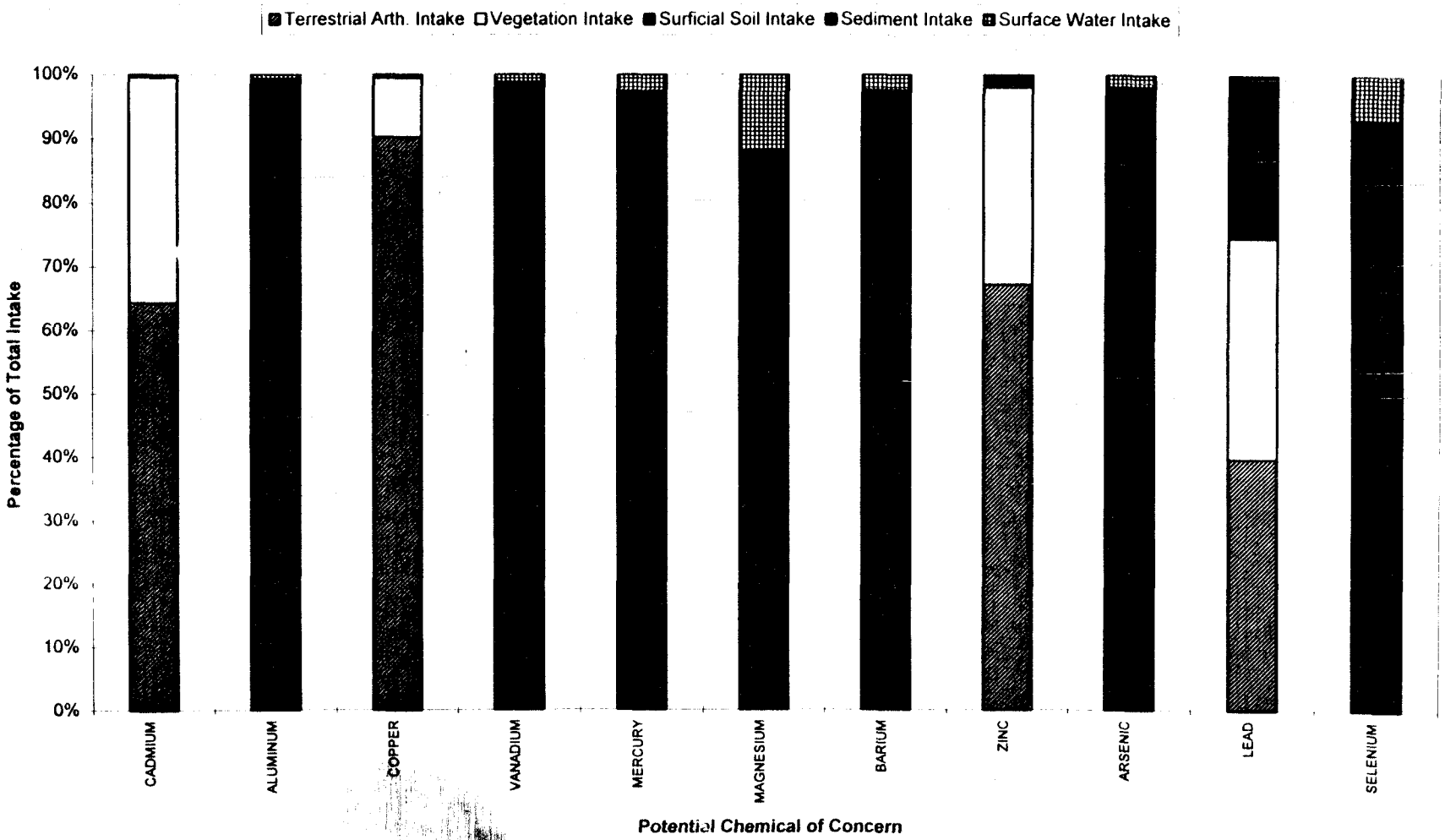


Hazard Index versus Site Use Factor



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU5 C-Ponds Source Area at RFETS

Contribution of Exposure Points to Total Intake



Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU5 C-Ponds Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU5 C-PONDS		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU5	IR = 0.051 SUF = 1		IR = 0.119 SUF = 1			IR = 0.002 SUF = 1		IR = 0.002 SUF = 1		IR = 0.150 SUF = 1					
CADMIUM		6.400	0.326	1.500		0.179	ND	—	0.898	0.002	0.003	3.88E-04	0.507	0.479	1.06	45.51%
ALUMINUM		NR	—	NR		—	13000.000	26.000	13018.068	26.036	2.432	0.365	52.401	80.009	0.65	28.16%
COPPER	X	204.000	10.404	8.926		1.062	10.200	0.020	23.083	0.046	0.008	0.001	11.534	43.327	0.27	11.45%
VANADIUM		NR	—	NR		—	34.700	0.069	33.892	0.068	0.012	0.002	0.139	2.313	0.06	2.58%
MERCURY	X	ND	—	ND		—	ND	—	0.393	0.001	1.41E-04	2.12E-05	0.001	0.017	0.06	2.53%
MAGNESIUM		NR	—	NR		—	2860.000	5.720	3157.852	6.316	10.768	1.615	13.651	256.400	0.05	2.29%
BARIUM	X	NR	—	NR		—	144.000	0.288	177.770	0.356	0.109	0.016	0.660	14.217	0.05	2.00%
ZINC	X	210.000	10.710	41.397		4.926	56.700	0.113	94.329	0.189	0.048	0.007	15.946	418.663	0.04	1.64%
ARSENIC		NR	—	NR		—	3.500	0.007	4.893	0.010	0.002	3.34E-04	0.017	0.682	0.02	1.07%
LEAD	X	3.600	0.184	1.355		0.161	26.100	0.052	32.420	0.065	0.006	0.001	0.463	20.933	0.02	0.95%
SELENIUM		ND	—	ND		—	0.510	0.001	1.353	0.003	0.002	2.78E-04	0.004	0.317	0.01	0.54%
MANGANESE		NR	—	NR		—	360.000	0.720	521.405	1.043	0.120	0.018	1.781	230.264	0.01	0.33%
ANTIMONY	X	NR	—	NR		—	ND	—	ND	—	0.015	0.002	0.002	0.346	0.01	0.25%
THALLIUM		NR	—	NR		—	ND	—	0.833	0.002	0.002	3.50E-04	0.002	0.697	<0.01	0.12%
COBALT	X	NR	—	NR		—	7.900	0.016	9.581	0.019	0.008	0.001	0.036	13.192	<0.01	0.12%
NITRATE/NITRITE		NR	—	NR		—	NR	—	3.570	0.007	0.541	0.081	0.088	34.669	<0.01	0.11%
LITHIUM	X	NR	—	NR		—	10.700	0.021	10.543	0.021	0.020	0.003	0.045	24.571	<0.01	0.08%
TIN		NR	—	NR		—	32.700	0.065	12.061	0.024	0.021	0.003	0.093	65.961	<0.01	0.06%
ACETONE		NR	—	NR	0.266	0.032	NR	—	0.124	2.49E-04	0.014	0.002	0.034	26.167	<0.01	0.06%
BERYLLIUM		NR	—	NR		—	ND	—	0.767	0.002	0.001	1.50E-04	0.002	1.727	<0.01	0.05%
MOLYBDENUM		NR	—	NR		—	ND	—	4.832	0.010	0.017	0.002	0.012	12.061	<0.01	0.04%
NICKEL		NR	—	NR		—	13.800	0.028	15.645	0.031	0.009	0.001	0.060	104.666	<0.01	0.02%
STRONTIUM	X	NR	—	NR		—	41.700	0.083	62.795	0.126	0.337	0.051	0.260	688.177	<0.01	0.02%
METHYLENE CHLORIDE	X	NR	—	NR	0.027	0.003	NR	—	0.020	3.97E-05	0.004	0.001	0.004	15.307	<0.01	0.01%
CHROMIUM		ND	—	10.957		1.304	14.800	0.030	14.042	0.028	0.005	0.001	1.362	7161.754	<0.01	0.01%
TOLUENE	X	NR	—	NR	0.020	0.002	NR	—	0.146	2.92E-04	0.001	1.50E-04	0.003	30.220	<0.01	<0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	ND	—	ND	—	0.640	0.001	0.002	3.00E-04	0.002	21.321	<0.01	<0.01%
SILVER	X	ND	—	ND		—	ND	—	1.700	0.003	0.004	0.001	0.004	58.626	<0.01	<0.01%
CHLOROFORM		NR	—	NR	ND	—	NR	—	ND	—	0.003	3.86E-04	3.86E-04	39.250	<0.01	<0.01%
FLUORANTHENE	X	NR	—	NR	ND	—	0.078	1.56E-04	0.140	2.80E-04	ND	—	4.36E-04	145.535	<0.01	<0.01%
PYRENE	X	NR	—	NR	ND	—	0.094	1.88E-04	ND	—	ND	—	1.88E-04	87.321	<0.01	<0.01%
PHENOL	X	NR	—	NR	ND	—	ND	—	0.150	3.00E-04	ND	—	3.00E-04	158.307	<0.01	<0.01%
delta-BHC		NR	—	NR	ND	—	ND	—	0.004	7.00E-06	ND	—	7.00E-06	4.186	<0.01	<0.01%
BUTYL BENZYL PHTHALATE	X	NR	—	NR	ND	—	ND	—	0.057	1.14E-04	ND	—	1.14E-04	93.349	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	ND	—	ND	—	0.110	2.20E-04	ND	—	2.20E-04	329.807	<0.01	<0.01%
2-BUTANONE		NR	—	NR	ND	—	NR	—	0.027	5.35E-05	0.006	0.001	9.24E-04	4672.704	<0.01	<0.01%
1,1,1-TRICHLOROETHANE		NR	—	NR	ND	—	NR	—	0.001	2.00E-06	ND	—	2.00E-06	1223.894	<0.01	<0.01%

HAZARD INDEX 2.33

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate

SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU11 West Spray Field Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU11 WEST SPRAY FIELD		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU11	IR = NR SUF = 1		IR = 0.170 SUF = 1			IR = 0.004 SUF = 1		IR = I SUF = I		IR = I SUF = I					
ALUMINUM		NR	—	NR		—	12185.807	48.743	NR	—	NR	—	48.743	80.009	0.61	71.23%
VANADIUM		NR	—	NR		—	30.669	0.123	NR	—	NR	—	0.123	2.313	0.05	6.22%
ARSENIC		NR	—	NR		—	8.032	0.032	NR	—	NR	—	0.032	0.682	0.05	5.49%
ANTIMONY		NR	—	NR		—	3.500	0.014	NR	—	NR	—	0.014	0.346	0.04	4.73%
BARIUM		NR	—	NR		—	130.524	0.522	NR	—	NR	—	0.522	14.217	0.04	4.29%
MAGNESIUM		NR	—	NR		—	1746.670	6.987	NR	—	NR	—	6.987	256.400	0.03	3.19%
LEAD		NR	—	NR		—	46.092	0.184	NR	—	NR	—	0.184	20.933	0.01	1.03%
SELENIUM		NR	—	NR		—	0.509	0.002	NR	—	NR	—	0.002	0.317	0.01	0.74%
CADMIUM		NR	—	NR		—	0.737	0.003	NR	—	NR	—	0.003	0.479	0.01	0.73%
MANGANESE		NR	—	NR		—	332.865	1.331	NR	—	NR	—	1.331	230.264	0.01	0.68%
COBALT		NR	—	NR		—	6.719	0.027	NR	—	NR	—	0.027	13.192	<0.01	0.24%
ACETONE		NR	—	NR	0.296	0.050	NR	—	NR	—	NR	—	0.050	26.167	<0.01	0.22%
NITRATE/NITRITE		NR	—	NR		—	15.866	0.063	NR	—	NR	—	0.063	34.669	<0.01	0.21%
BERYLLIUM		NR	—	NR		—	0.682	0.003	NR	—	NR	—	0.003	1.727	<0.01	0.20%
LITHIUM		NR	—	NR		—	10.111	0.040	NR	—	NR	—	0.040	24.571	<0.01	0.19%
THALLIUM		NR	—	NR		—	0.270	0.001	NR	—	NR	—	0.001	0.697	<0.01	0.17%
COPPER		NR	—	NR		—	13.023	0.052	NR	—	NR	—	0.052	43.327	<0.01	0.14%
MOLYBDENUM		NR	—	NR		—	2.600	0.010	NR	—	NR	—	0.010	12.061	<0.01	0.10%
ZINC		NR	—	NR		—	44.730	0.179	NR	—	NR	—	0.179	418.663	<0.01	0.05%
METHYLENE CHLORIDE		NR	—	NR	0.034	0.006	NR	—	NR	—	NR	—	0.006	15.307	<0.01	0.05%
NICKEL		NR	—	NR		—	9.190	0.037	NR	—	NR	—	0.037	104.666	<0.01	0.04%
TIN		NR	—	NR		—	4.900	0.020	NR	—	NR	—	0.020	65.961	<0.01	0.04%
STRONTIUM		NR	—	NR		—	23.573	0.094	NR	—	NR	—	0.094	688.177	<0.01	0.02%
BIS(2-ETHYLHEXYL)PHTHALATE		NR	—	NR	0.011	0.002	NR	—	NR	—	NR	—	0.002	21.321	<0.01	0.01%
CHLOROFORM		NR	—	NR	0.017	0.003	NR	—	NR	—	NR	—	0.003	39.250	<0.01	0.01%
TOLUENE		NR	—	NR	0.004	0.001	NR	—	NR	—	NR	—	0.001	30.220	<0.01	<0.01%
DI-n-BUTYL PHTHALATE		NR	—	NR	0.019	0.003	NR	—	NR	—	NR	—	0.003	329.807	<0.01	<0.01%
CHROMIUM		NR	—	NR		—	13.479	0.054	NR	—	NR	—	0.054	7161.754	<0.01	<0.01%
TRICHLOROETHENE		NR	—	NR	0.004	0.001	NR	—	NR	—	NR	—	0.001	171.044	<0.01	<0.01%
2-BUTANONE		NR	—	NR	0.107	0.018	NR	—	NR	—	NR	—	0.018	4672.704	<0.01	<0.01%

HAZARD INDEX 0.86

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
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NO LOG K_{ow} = No octonol-water partition coefficient available; LOG K_{ow}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units = mg/kg

Summary of Ecotoxicological Risk to Preble's Meadow Jumping Mice in the OU2 Mound Area Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU2 MOUND AREA		EXPOSURE POINT											SUMMARY			
		Terrestrial Arth.		Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte[1]	PCOC for OU2	IR = NR SUF = 1		IR = 0.170 SUF = 1			IR = 0.004 SUF = 1		IR = I SUF = I		IR = I SUF = I					
ALUMINUM		NR	—	NR		—	10100.000	40.400	NR	—	NR	—	40.400	80.009	0.50	70.04%
VANADIUM		NR	—	NR		—	31.100	0.124	NR	—	NR	—	0.124	2.313	0.05	7.44%
MAGNESIUM		NR	—	NR		—	2730.000	10.920	NR	—	NR	—	10.920	256.400	0.04	5.91%
ARSENIC		NR	—	NR		—	5.900	0.024	NR	—	NR	—	0.024	0.682	0.04	4.88%
BARIUM		NR	—	NR		—	108.000	0.432	NR	—	NR	—	0.432	14.217	0.03	4.22%
AROCLOR-1254	X	NR	—	NR	ND	—	0.970	0.004	NR	—	NR	—	0.004	0.142	0.03	3.91%
ACETONE		NR	—	NR	0.989	0.168	NR	—	NR	—	NR	—	0.168	26.167	0.01	0.89%
MANGANESE		NR	—	NR		—	240.000	0.960	NR	—	NR	—	0.960	230.264	<0.01	0.58%
LEAD	X	NR	—	NR		—	16.000	0.064	NR	—	NR	—	0.064	20.933	<0.01	0.42%
THALLIUM		NR	—	NR		—	0.500	0.002	NR	—	NR	—	0.002	0.697	<0.01	0.40%
COBALT		NR	—	NR		—	6.200	0.025	NR	—	NR	—	0.025	13.192	<0.01	0.26%
LITHIUM		NR	—	NR		—	8.800	0.035	NR	—	NR	—	0.035	24.571	<0.01	0.20%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	0.166	0.028	0.052	2.08E-04	NR	—	NR	—	0.029	21.321	<0.01	0.19%
COPPER		NR	—	NR		—	13.100	0.052	NR	—	NR	—	0.052	43.327	<0.01	0.17%
METHYLENE CHLORIDE		NR	—	NR	0.062	0.011	NR	—	NR	—	NR	—	0.011	15.307	<0.01	0.10%
CHROMIUM	X	62.800	3.203	NR		—	10.200	0.041	NR	—	NR	—	3.244	7161.754	<0.01	0.06%
ZINC		NR	—	NR		—	46.300	0.185	NR	—	NR	—	0.185	418.663	<0.01	0.06%
NICKEL		NR	—	NR		—	11.400	0.046	NR	—	NR	—	0.046	104.666	<0.01	0.06%
STRONTIUM		NR	—	NR		—	66.300	0.265	NR	—	NR	—	0.265	688.177	<0.01	0.05%
BENZO(a)PYRENE	X	NR	—	NR	ND	—	0.096	3.84E-04	NR	—	NR	—	3.84E-04	1.163	<0.01	0.05%
TOLUENE		NR	—	NR	0.042	0.007	NR	—	NR	—	NR	—	0.007	30.220	<0.01	0.03%
AROCLOR 1260	X	NR	—	NR	ND	—	0.660	0.003	NR	—	NR	—	0.003	18.205	<0.01	0.02%
TETRACHLOROETHENE		NR	—	NR	0.011	0.002	NR	—	NR	—	NR	—	0.002	16.300	<0.01	0.02%
4 METHYL 2-PENTANONE		NR	—	NR	0.027	0.005	NR	—	NR	—	NR	—	0.005	65.416	<0.01	0.01%
CHLOROFORM		NR	—	NR	0.020	0.003	NR	—	NR	—	NR	—	0.003	39.250	<0.01	0.01%
BENZO(b)FLUORANTHENE	X	NR	—	NR	ND	—	0.120	4.80E-04	NR	—	NR	—	4.80E-04	11.634	<0.01	0.01%
BENZENE		NR	—	NR	0.007	0.001	NR	—	NR	—	NR	—	0.001	30.662	<0.01	<0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	ND	—	0.086	3.44E-04	NR	—	NR	—	3.44E-04	11.634	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	ND	—	0.045	1.80E-04	NR	—	NR	—	1.80E-04	11.634	<0.01	<0.01%
TRICHLOROETHENE		NR	—	NR	0.010	0.002	NR	—	NR	—	NR	—	0.002	171.044	<0.01	<0.01%
PYRENE	X	NR	—	NR	ND	—	0.180	0.001	NR	—	NR	—	0.001	87.321	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	0.015	0.003	ND	—	NR	—	NR	—	0.003	329.807	<0.01	<0.01%
FLUORANTHENE	X	NR	—	NR	0.004	0.001	0.200	0.001	NR	—	NR	—	0.001	145.535	<0.01	<0.01%
2-BUTANONE		NR	—	NR	0.186	0.032	NR	—	NR	—	NR	—	0.032	4672.704	<0.01	<0.01%
CHRYSENE	X	NR	—	NR	ND	—	0.100	4.00E-04	NR	—	NR	—	4.00E-04	116.343	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	—	NR	ND	—	0.045	1.80E-04	NR	—	NR	—	1.80E-04	116.343	<0.01	<0.01%
PHENANTHRENE	X	NR	—	NR	ND	—	0.083	3.32E-04	NR	—	NR	—	3.32E-04	1163.433	<0.01	<0.01%

[1] Chromium concentration in terrestrial arthropods is estimated from tissue:soil ratios in the East Trenches source area.

HAZARD INDEX 0.72

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion R[illegible]
SUF = Site Use [illegible]or

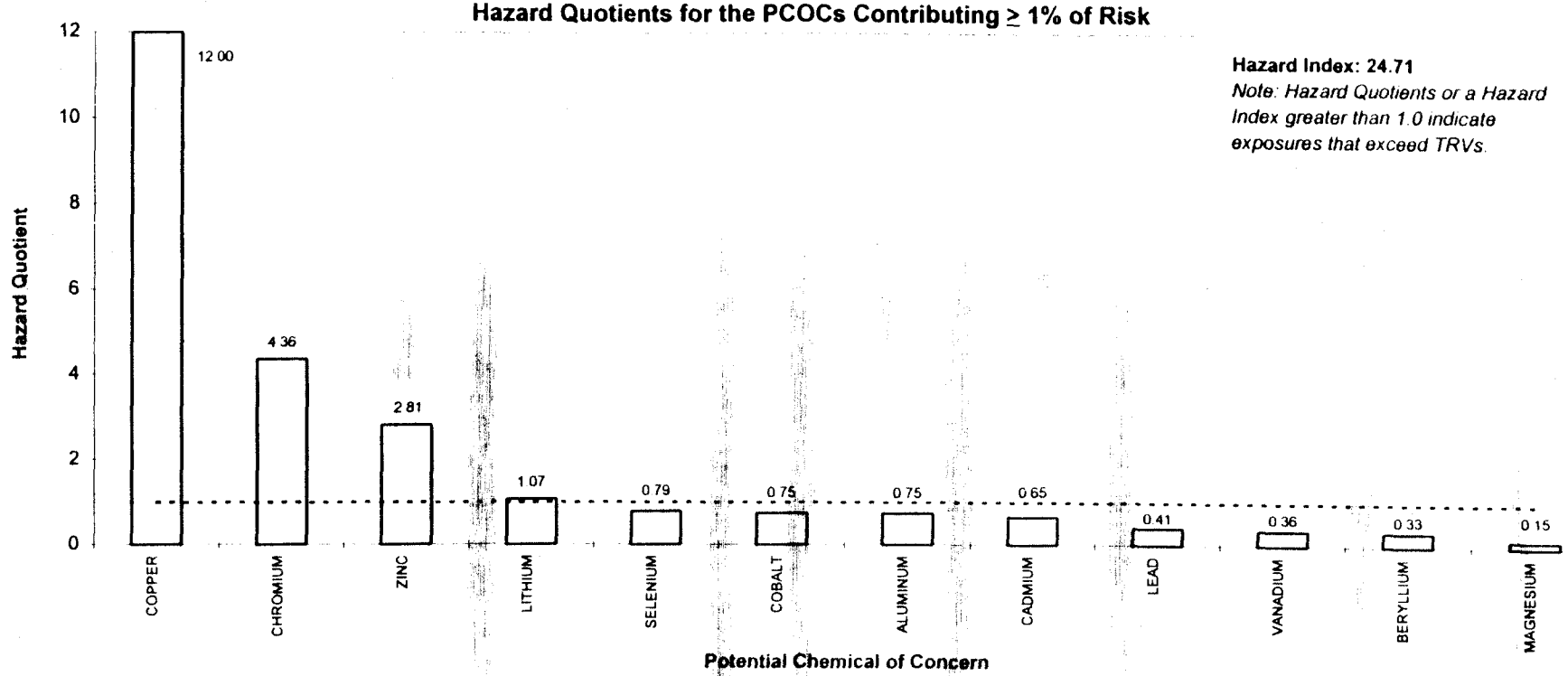
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{ow} = No octonol-water partition coefficient available; LOG K_{ow}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinitie[illegible] compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for [illegible]entrations = mg/kg

DRAFT

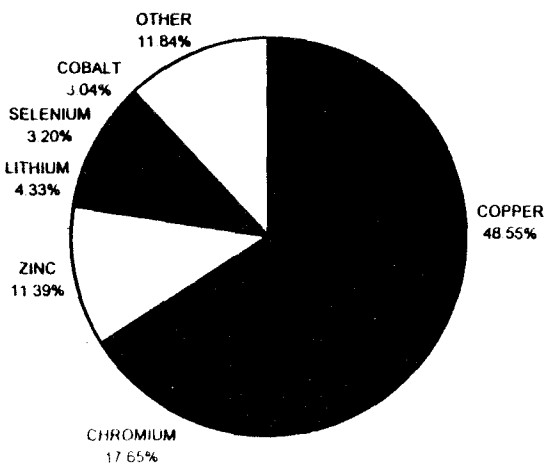
Summary of Ecotoxicological Risk to American Kestrels

Summary of Ecotoxicological Risk to American Kestrels in the OU2 East Trenches Source Area at RFETS

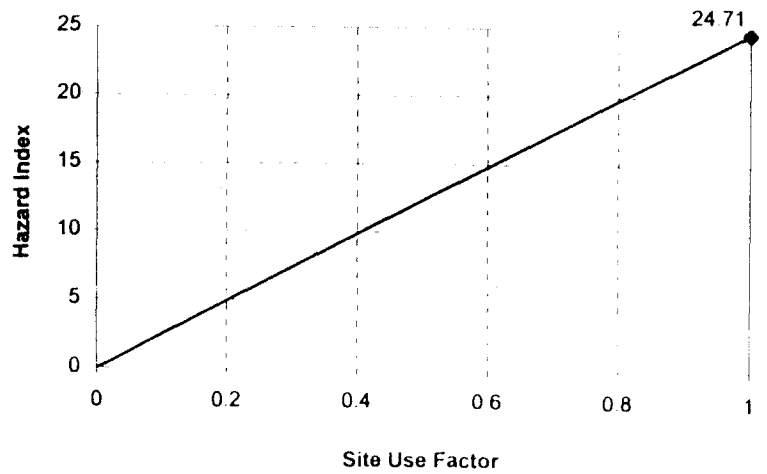
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



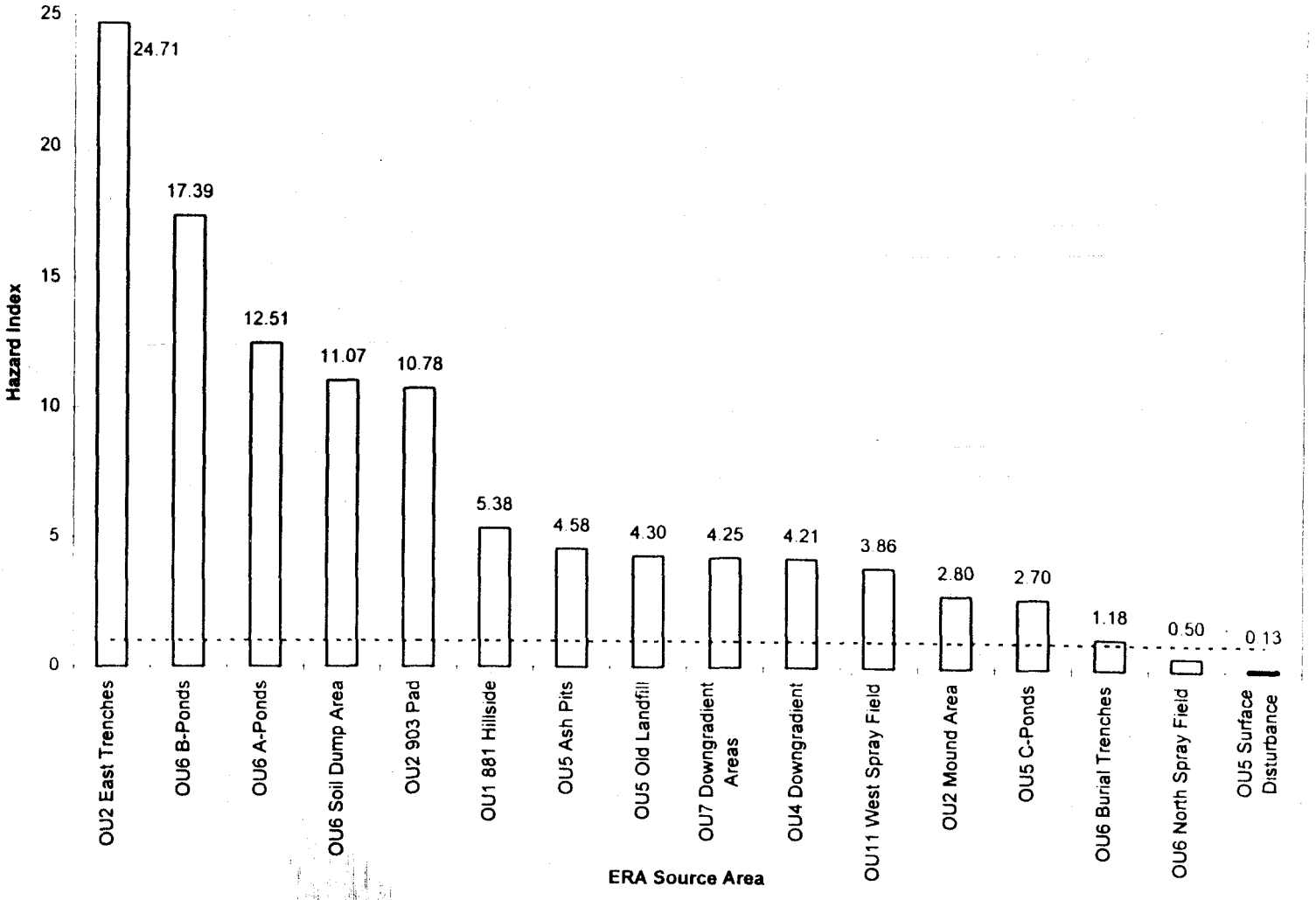
% Contributions of PCOCs to Total Risk



Hazard Index versus Site Use Factor



Summary of Ecotoxicological Risk to American Kestrels at RFETS



Summary of Ecotoxicological Risk to American Kestrels in the OU2 East Trenches Source Area at RFETS

AMERICAN KESTRELS OU2 EAST TRENCHES		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU2	IR = 0.140 SUF = 1		IR = 0.150 SUF = 1		IR = 0.008 SUF = 1					
COPPER		17.166	2.403	2676.866	401.530	13.080	0.105	404.038	33.680	12.00	48.55%
CHROMIUM	X	ND	—	63.475	9.521	12.981	0.104	9.625	2.207	4.36	17.65%
ZINC		308.380	43.173	426.000	63.900	54.004	0.432	107.505	38.207	2.81	11.39%
LITHIUM		NR	—	NR	—	13.267	0.106	0.106	0.099	1.07	4.33%
SELENIUM		4.609	0.645	ND	—	0.510	0.004	0.649	0.820	0.79	3.20%
COBALT		NR	—	NR	—	7.136	0.057	0.057	0.076	0.75	3.04%
ALUMINUM		NR	—	NR	—	12216.913	97.735	97.735	130.867	0.75	3.02%
CADMIUM		2.548	0.357	11.134	1.670	1.400	0.011	2.038	3.115	0.65	2.65%
LEAD	X	8.589	1.202	ND	—	45.985	0.368	1.570	3.850	0.41	1.65%
VANADIUM		NR	—	NR	—	27.790	0.222	0.222	0.616	0.36	1.46%
BERYLLIUM		NR	—	NR	—	0.590	0.005	0.005	0.015	0.33	1.35%
MAGNESIUM		NR	—	NR	—	2431.742	19.454	19.454	127.452	0.15	0.62%
MANGANESE		NR	—	NR	—	310.494	2.484	2.484	21.089	0.12	0.48%
BARIUM		NR	—	NR	—	128.840	1.031	1.031	21.155	0.05	0.20%
TIN		NR	—	NR	—	34.188	0.274	0.274	11.455	0.02	0.10%
ARSENIC		NR	—	NR	—	5.496	0.044	0.044	1.846	0.02	0.10%
STRONTIUM		NR	—	NR	—	34.852	0.279	0.279	14.151	0.02	0.08%
BENZO(a)PYRENE	X	NR	—	NR	—	0.120	0.001	0.001	0.078	0.01	0.05%
PHENANTHRENE	X	NR	—	NR	—	0.091	0.001	0.001	0.077	0.01	0.05%
FLUORANTHENE	X	NR	—	NR	—	0.229	0.002	0.002	0.776	<0.01	0.01%
PYRENE	X	NR	—	NR	—	0.218	0.002	0.002	0.776	<0.01	0.01%
BENZO(b)FLUORANTHENE	X	NR	—	NR	—	0.160	0.001	0.001	0.774	<0.01	0.01%
CHRYSENE	X	NR	—	NR	—	0.110	0.001	0.001	0.776	<0.01	0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	—	0.062	4.96E-04	4.96E-04	0.776	<0.01	<0.01%
NICKEL		NR	—	NR	—	11.629	0.093	0.093	146.122	<0.01	<0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	—	0.076	0.001	0.001	1.204	<0.01	<0.01%
SILVER		ND	—	ND	—	1.200	0.010	0.010	2304.896	<0.01	<0.01%

HAZARD INDEX 24.71

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
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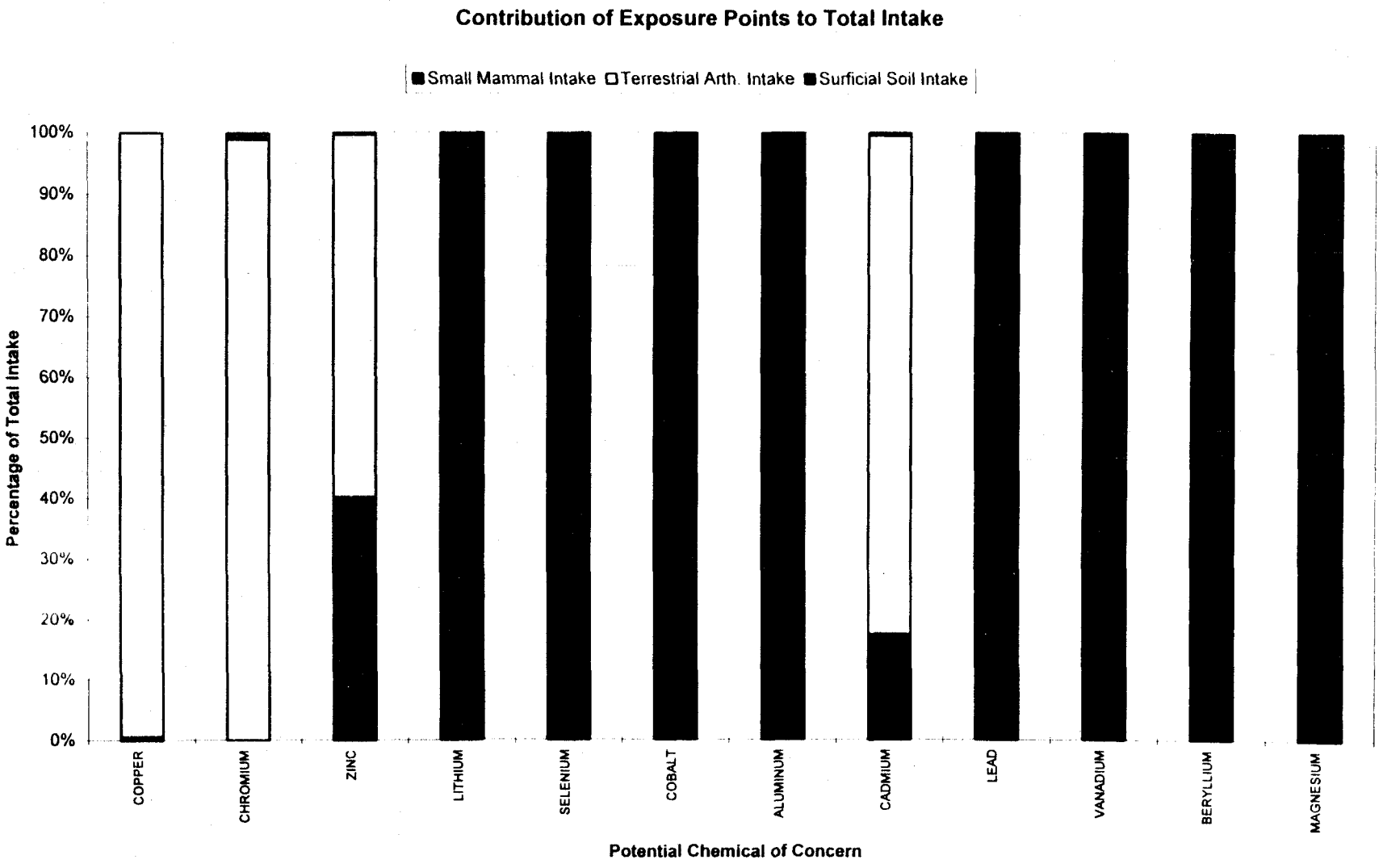
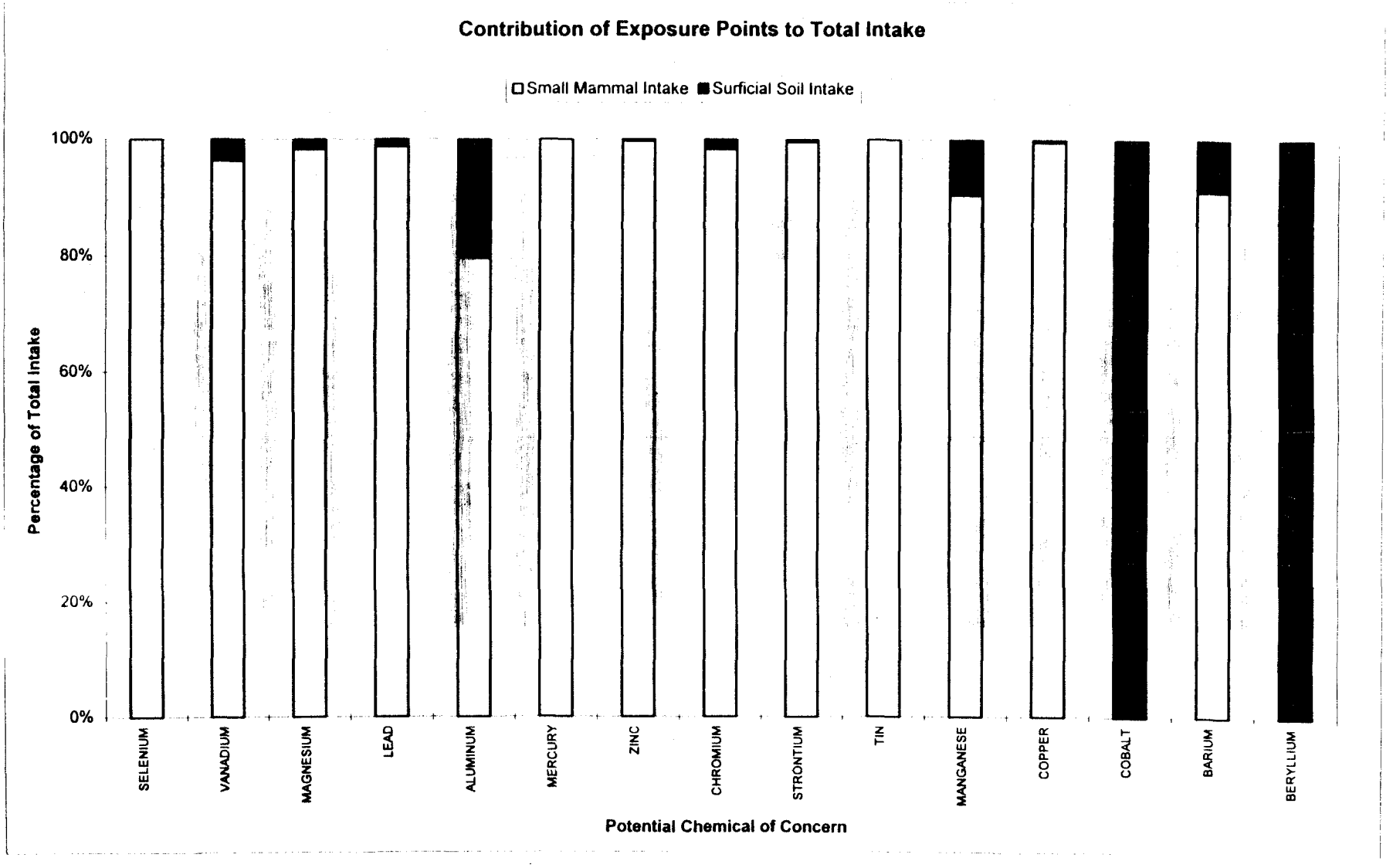
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available, LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

Summary of Ecotoxicological Risk to American Kes.. .is in the OU2 East Trenches Source Area at RFETS

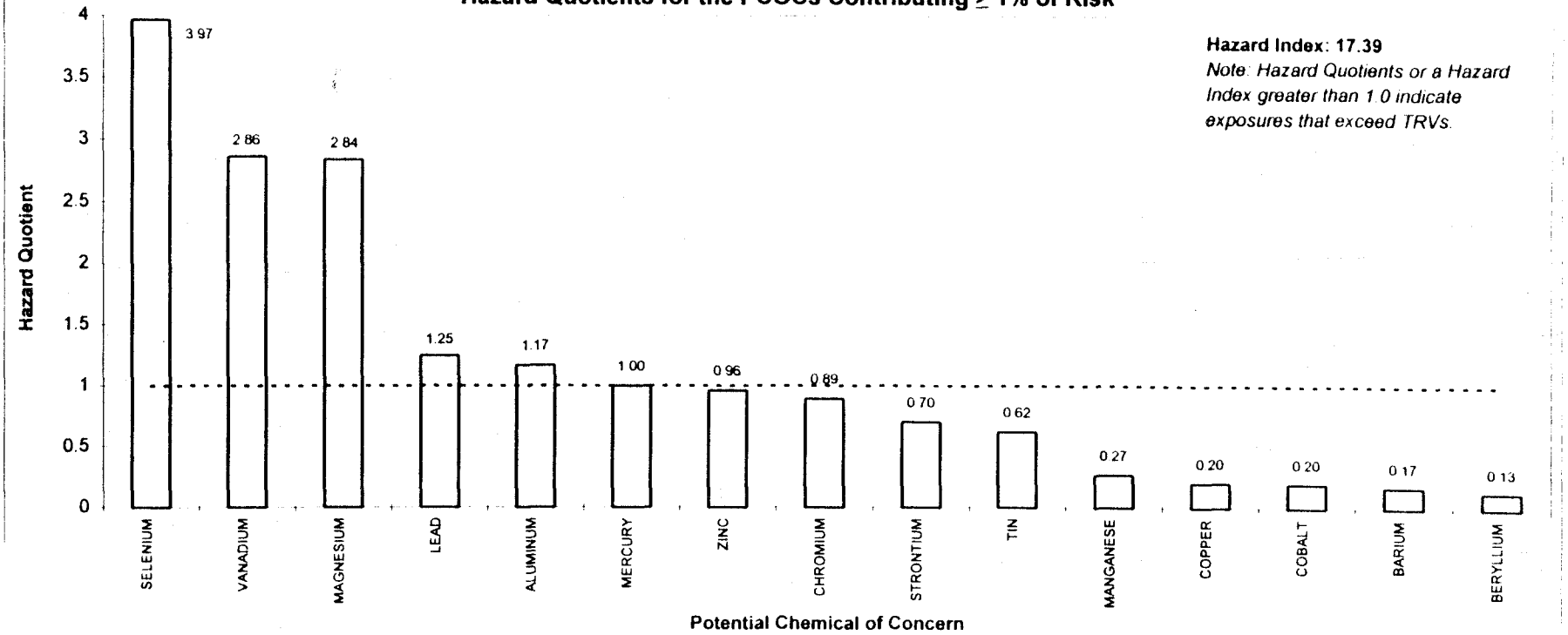


Summary of Ecotoxicological Risk to American Kestrels in the OU6 B-Ponds Source Area at RFETS

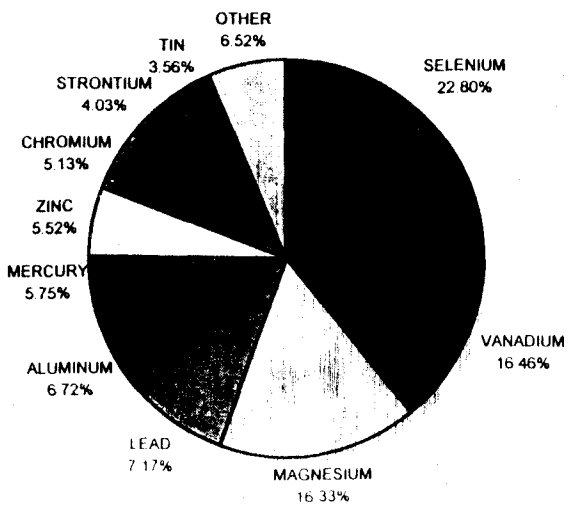


Summary of Ecotoxicological Risk to American Kestrels in the OU6 B-Ponds Source Area at RFETS

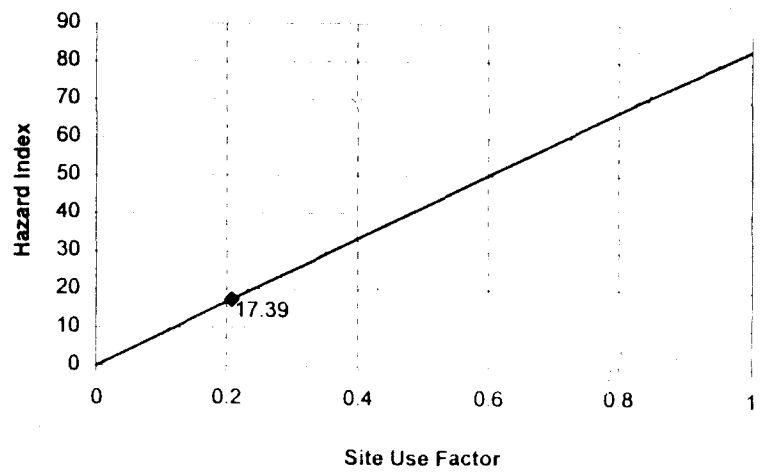
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



% Contributions of PCOCs to Total Risk

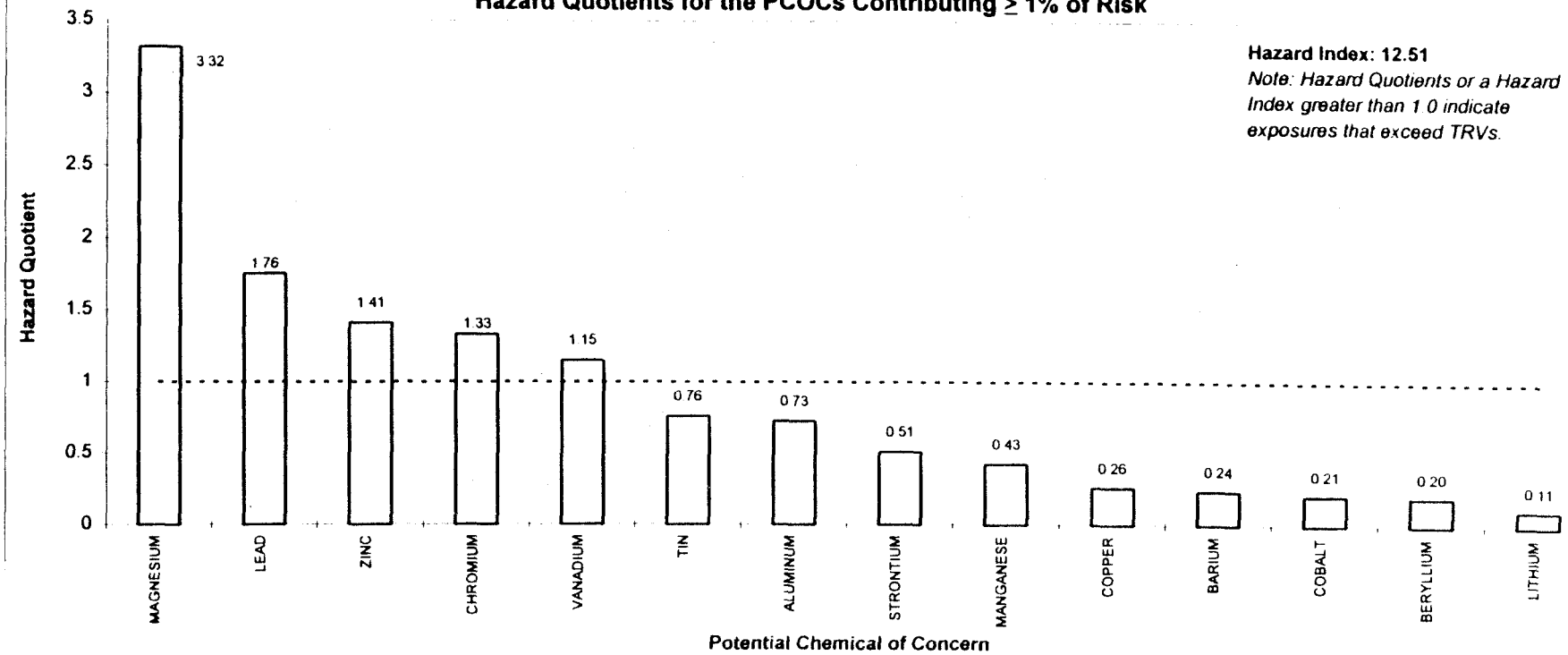


Hazard Index versus Site Use Factor

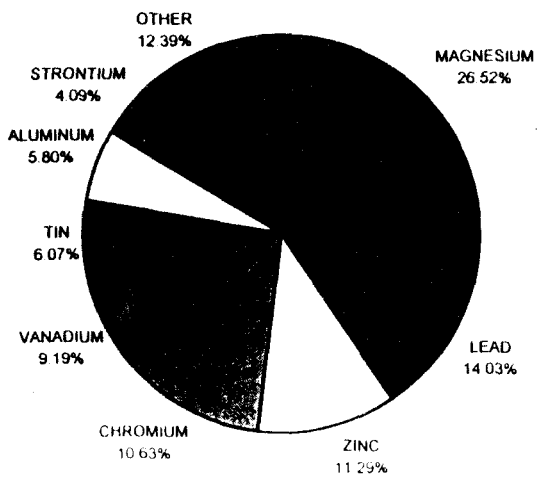


Summary of Ecotoxicological Risk to American Kestrels in the OU6 A-Ponds Source Area at RFETS

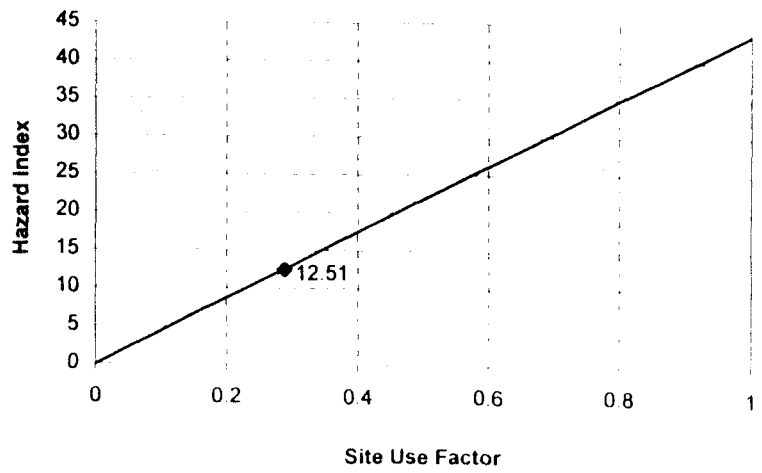
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



% Contributions of PCOCs to Total Risk



Hazard Index versus Site Use Factor



Summary of Ecotoxicological Risk to American Kestrels in the OU6 B-Ponds Source Area at RFETS

AMERICAN KESTRELS OU6 B-PONDS		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU6	IR = 0.290 SUF = 0.208		IR = I SUF = I		IR = 0.008 SUF = 0.208					
SELENIUM		53.918	3.252	NR	—	ND	—	3.252	0.820	3.97	22.80%
VANADIUM	X	28.178	1.700	NR	—	38.900	0.065	1.764	0.616	2.86	16.46%
MAGNESIUM	X	5898.794	355.815	NR	—	3790.000	6.307	362.122	127.452	2.84	16.33%
LEAD	X	78.532	4.737	NR	—	37.200	0.062	4.799	3.850	1.25	7.17%
ALUMINUM		2019.911	121.841	NR	—	18700.000	31.117	152.958	130.867	1.17	6.72%
MERCURY	X	0.235	0.014	NR	—	ND	—	0.014	0.014	1.00	5.75%
ZINC	X	606.869	36.606	NR	—	64.100	0.107	36.713	38.207	0.96	5.52%
CHROMIUM	X	32.115	1.937	NR	—	19.900	0.033	1.970	2.207	0.89	5.13%
STRONTIUM	X	163.891	9.886	NR	—	25.500	0.042	9.928	14.151	0.70	4.03%
TIN		117.725	7.101	NR	—	ND	—	7.101	11.455	0.62	3.56%
MANGANESE	X	84.595	5.103	NR	—	321.000	0.534	5.637	21.089	0.27	1.54%
COPPER	X	112.560	6.790	NR	—	17.000	0.028	6.818	33.680	0.20	1.16%
COBALT	X	ND	—	NR	—	9.000	0.015	0.015	0.076	0.20	1.13%
BARIUM	X	55.126	3.325	NR	—	194.000	0.323	3.648	21.155	0.17	0.99%
BERYLLIUM		ND	—	NR	—	0.970	0.002	0.002	0.015	0.13	0.77%
LITHIUM		ND	—	NR	—	5.900	0.010	0.010	0.099	0.10	0.58%
THALLIUM		ND	—	NR	—	0.230	3.83E-04	3.83E-04	0.007	0.05	0.31%
ARSENIC	X	ND	—	NR	—	5.100	0.008	0.008	1.846	<0.01	0.02%
SILVER	X	16.472	0.994	NR	—	ND	—	0.994	2304.896	<0.01	<0.01%
NICKEL	X	ND	—	NR	—	14.600	0.024	0.024	146.122	<0.01	<0.01%

HAZARD INDEX 17.39

Notes:

RFETS = Rocky Flats Environmental Technology Site
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Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to American Kestrels in the OU6 A-Ponds Source Area at RFETS

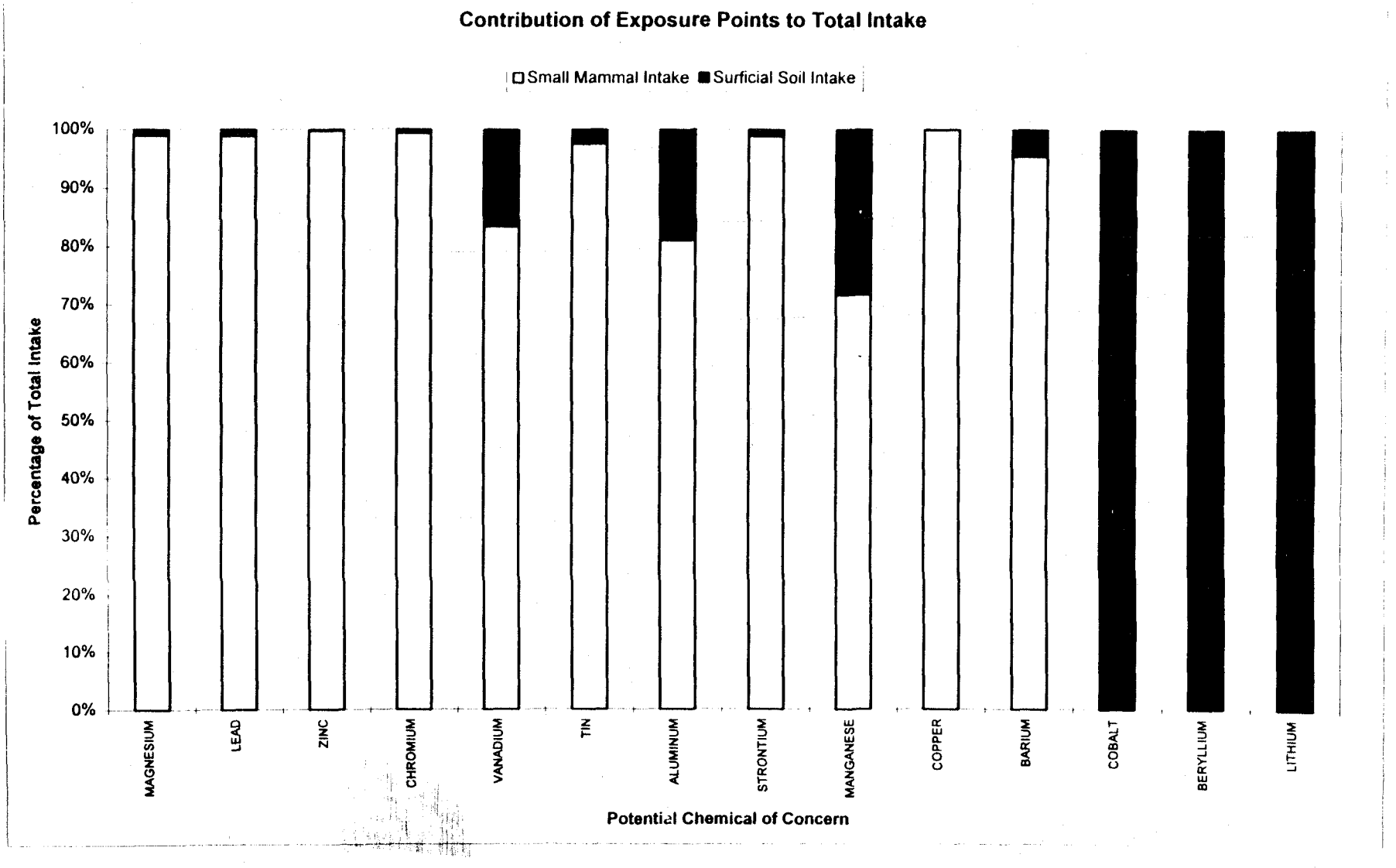
AMERICAN KESTRELS OU6 A-PONDS		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU6	IR = 0.290 SUF = 0.287		IR = I SUF = I		IR = 0.008 SUF = 0.287					
MAGNESIUM	X	5030.433	418.683	NR	—	1880.000	4.316	422.999	127.452	3.32	26.52%
LEAD	X	80.277	6.681	NR	—	33.000	0.076	6.757	3.850	1.76	14.03%
ZINC	X	646.549	53.812	NR	—	65.800	0.151	53.963	38.207	1.41	11.29%
CHROMIUM	X	35.026	2.915	NR	—	9.000	0.021	2.936	2.207	1.33	10.63%
VANADIUM	X	7.100	0.591	NR	—	51.100	0.117	0.708	0.616	1.15	9.19%
TIN		102.000	8.489	NR	—	93.300	0.214	8.704	11.455	0.76	6.07%
ALUMINUM		925.173	77.002	NR	—	7830.000	17.978	94.980	130.867	0.73	5.80%
STRONTIUM	X	85.892	7.149	NR	—	37.100	0.085	7.234	14.151	0.51	4.09%
MANGANESE	X	77.287	6.433	NR	—	1110.000	2.549	8.981	21.089	0.43	3.40%
COPPER	X	106.489	8.863	NR	—	5.000	0.011	8.875	33.680	0.26	2.11%
BARIUM	X	57.799	4.811	NR	—	100.000	0.230	5.040	21.155	0.24	1.90%
COBALT	X	ND	—	NR	—	7.100	0.016	0.016	0.076	0.21	1.68%
BERYLLIUM		ND	—	NR	—	1.300	0.003	0.003	0.015	0.20	1.60%
LITHIUM		ND	—	NR	—	4.800	0.011	0.011	0.099	0.11	0.89%
4,4'-DDT		NR	—	NR	—	0.026	5.97E-05	5.97E-05	0.001	0.06	0.48%
NICKEL	X	54.095	4.502	NR	—	13.100	0.030	4.532	146.122	0.03	0.25%
MOLYBDENUM	X	ND	—	NR	—	5.300	0.012	0.012	2.497	<0.01	0.04%
ARSENIC	X	ND	—	NR	—	2.200	0.005	0.005	1.846	<0.01	0.02%
CADMIUM		ND	—	NR	—	2.200	0.005	0.005	3.115	<0.01	0.01%
SILVER	X	14.724	1.225	NR	—	ND	—	1.225	2304.896	<0.01	<0.01%
delta-BHC		NR	—	NR	—	0.023	5.28E-05	5.28E-05	0.603	<0.01	<0.01%

HAZARD INDEX 12.51

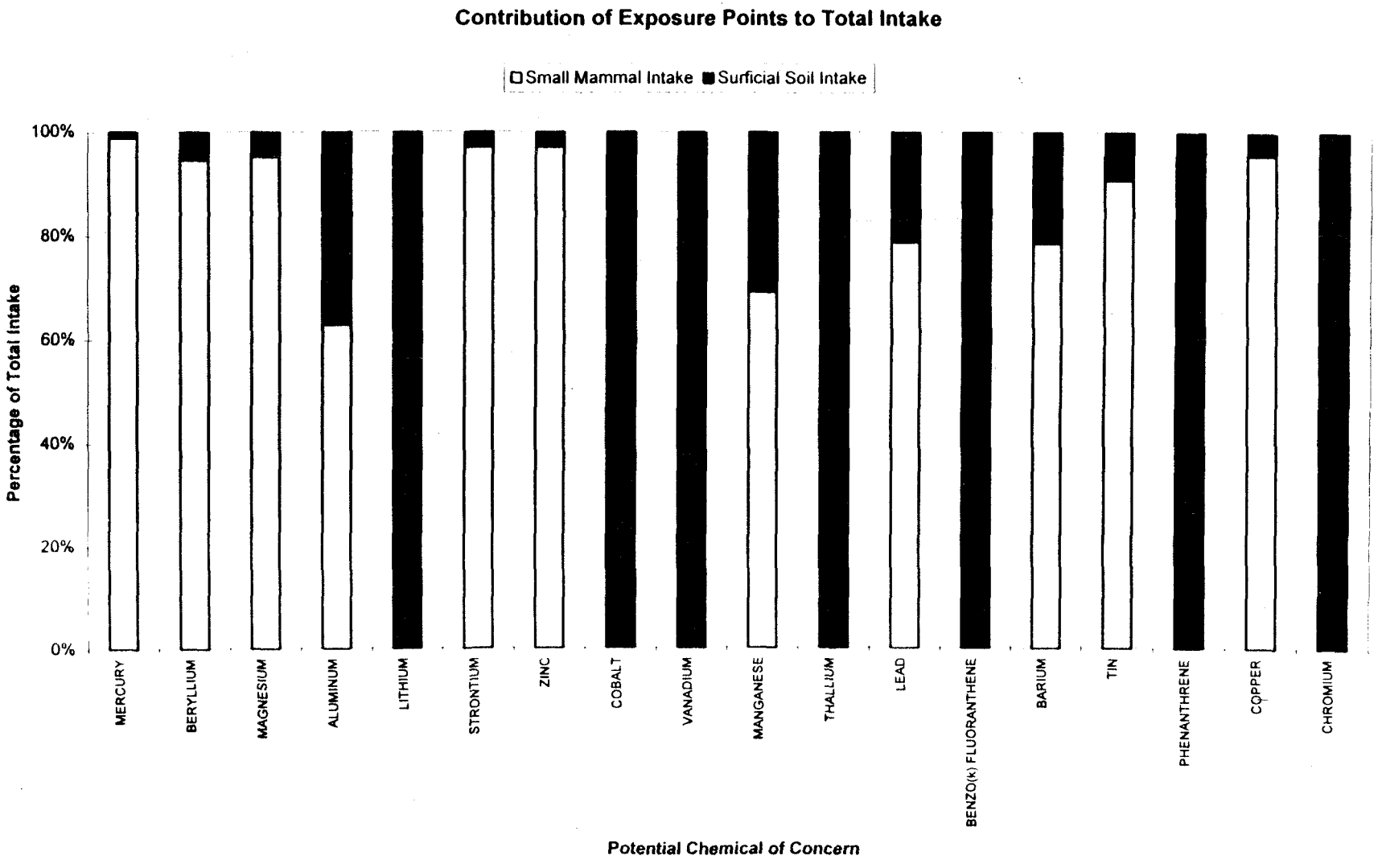
Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to American Kestrels in the OU6 A-Ponds Source Area at RFETS

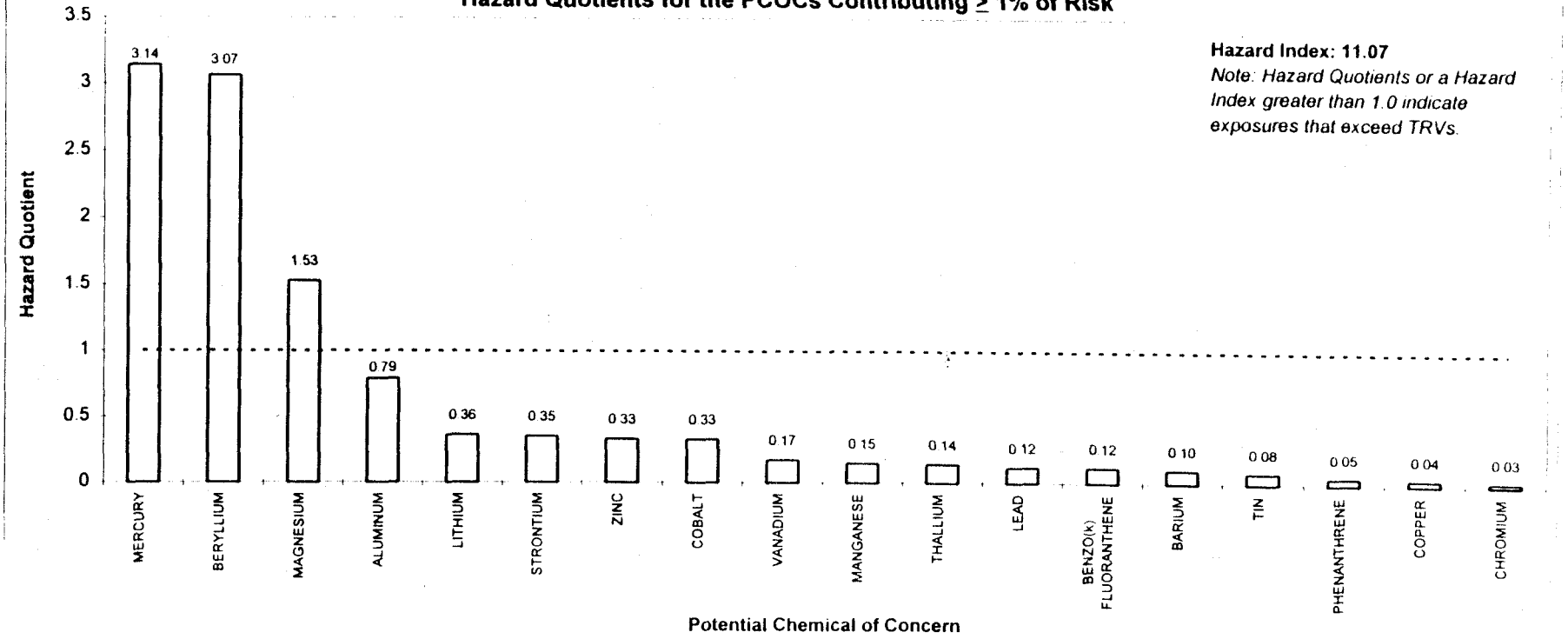


Summary of Ecotoxicological Risk to American Kestrels in the OU6 Soil Dump Areas Source Area at RFETS

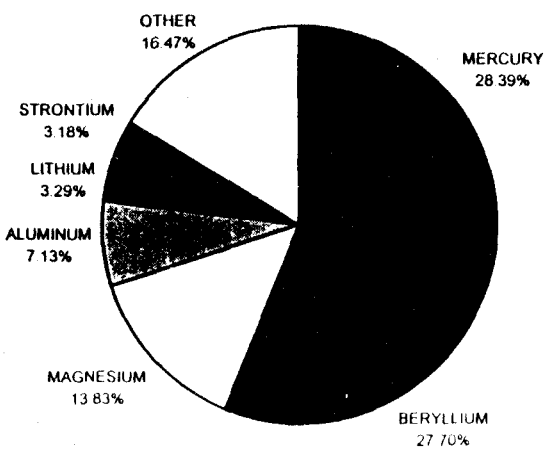


Summary of Ecotoxicological Risk to American Kestrels in the OU6 Soil Dump Areas Source Area at RFETS

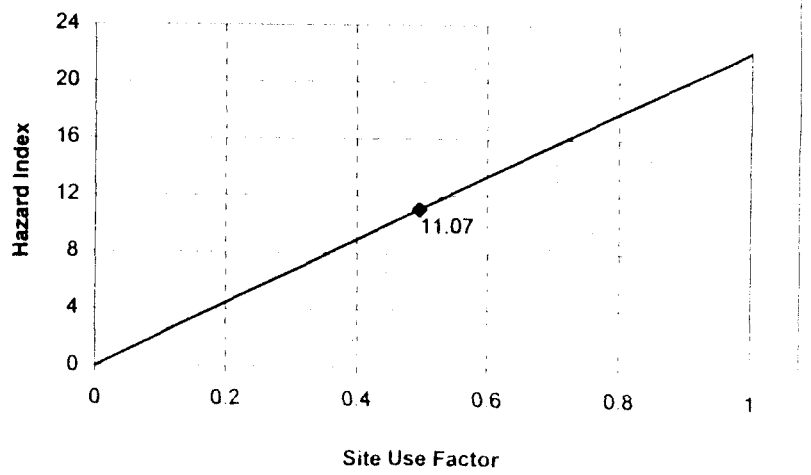
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



% Contributions of PCOCs to Total Risk



Hazard Index versus Site Use Factor



Summary of Ecotoxicological Risk to American Kestrels in the OU6 Soil Dump Areas Source Area at RFETS

AMERICAN KESTRELS OU6 SOIL DUMP AREAS		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU6	IR = 0.290 SUF = 0.496		IR = I SUF = I		IR = 0.008 SUF = 0.496					
ACENAPHTHENE	X	NR	—	NR	—	0.244	0.001	0.001	77.625	<0.01	<0.01%
NAPHTHALENE	X	NR	—	NR	—	0.110	4.36E-04	4.36E-04	77.625	<0.01	<0.01%
BUTYL BENZYL PHTHALATE	X	NR	—	NR	—	0.072	2.86E-04	2.86E-04	226.426	<0.01	<0.01%

HAZARD INDEX 11.07

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
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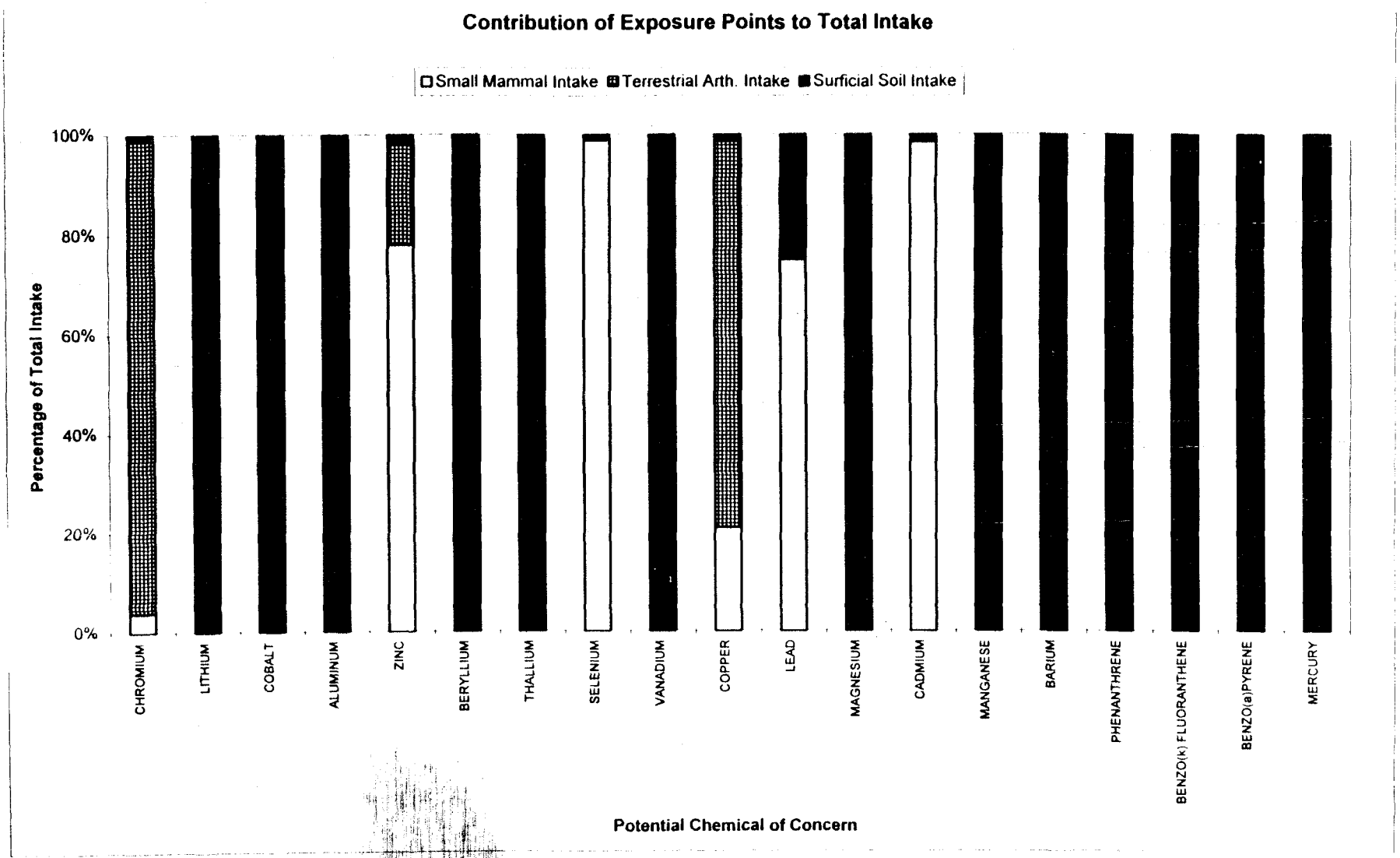
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to American Kestrels in the OU6 Soil Dump Areas Source Area at RFETS

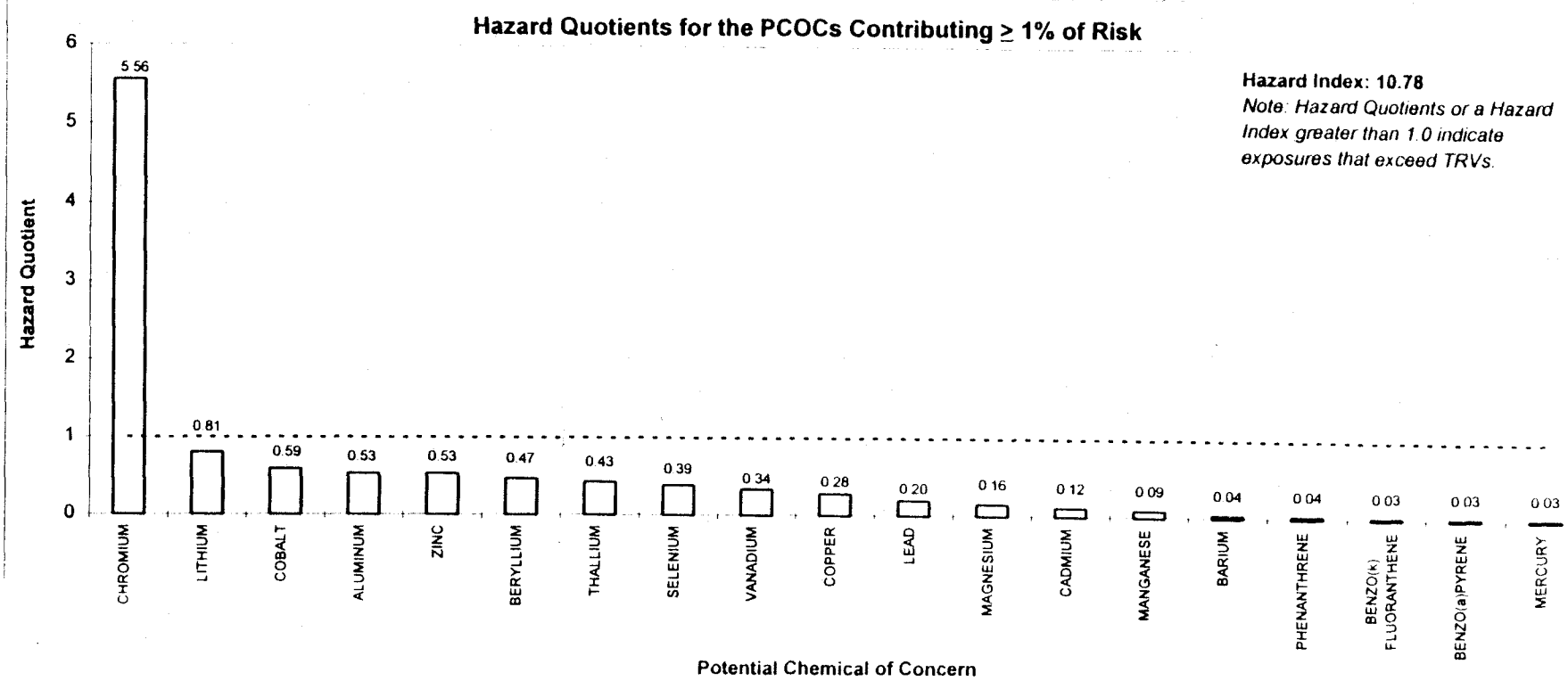
AMERICAN KESTRELS OU6 SOIL DUMP AREAS		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU6	IR = 0.290 SUF = 0.496		IR = 1 SUF = 1		IR = 0.008 SUF = 0.496					
MERCURY	X	0.302	0.043	NR	—	0.139	0.001	0.044	0.014	3.14	28.39%
BERYLLIUM		0.300	0.043	NR	—	0.621	0.002	0.046	0.015	3.07	27.70%
MAGNESIUM	X	1291.996	185.841	NR	—	2354.730	9.344	195.184	127.452	1.53	13.83%
ALUMINUM		451.741	64.978	NR	—	9659.033	38.327	103.306	130.867	0.79	7.13%
LITHIUM		ND	—	NR	—	9.142	0.036	0.036	0.099	0.36	3.29%
STRONTIUM	X	33.631	4.837	NR	—	37.401	0.148	4.986	14.151	0.35	3.18%
ZINC	X	85.709	12.328	NR	—	94.049	0.373	12.702	38.207	0.33	3.00%
COBALT	X	ND	—	NR	—	6.279	0.025	0.025	0.076	0.33	2.97%
VANADIUM	X	ND	—	NR	—	26.996	0.107	0.107	0.616	0.17	1.57%
MANGANESE	X	15.079	2.169	NR	—	244.118	0.969	3.138	21.089	0.15	1.34%
THALLIUM		ND	—	NR	—	0.260	0.001	0.001	0.007	0.14	1.29%
LEAD	X	2.505	0.360	NR	—	24.511	0.097	0.458	3.850	0.12	1.07%
BENZO(k) FLUORANTHENE	X	NR	—	NR	—	2.200	0.009	0.009	0.077	0.12	1.06%
BARIUM	X	11.861	1.706	NR	—	117.141	0.465	2.171	21.155	0.10	0.93%
TIN		6.000	0.863	NR	—	22.063	0.088	0.951	11.455	0.08	0.75%
PHENANTHRENE	X	NR	—	NR	—	1.056	0.004	0.004	0.077	0.05	0.47%
COPPER	X	9.200	1.323	NR	—	15.408	0.061	1.384	33.680	0.04	0.37%
CHROMIUM	X	ND	—	NR	—	15.651	0.062	0.062	2.207	0.03	0.25%
BENZO(a)PYRENE	X	NR	—	NR	—	0.495	0.002	0.002	0.078	0.03	0.23%
ANTHRACENE	X	NR	—	NR	—	0.382	0.002	0.002	0.078	0.03	0.23%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	—	0.473	0.002	0.002	0.121	0.02	0.15%
NITRATE/NITRITE		NR	—	NR	—	7.689	0.031	0.031	2.007	0.02	0.14%
ARSENIC	X	ND	—	NR	—	4.989	0.020	0.020	1.846	0.01	0.10%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	—	2.270	0.009	0.009	1.204	0.01	0.07%
FLUORANTHENE	X	NR	—	NR	—	1.376	0.005	0.005	0.776	0.01	0.06%
PYRENE	X	NR	—	NR	—	1.337	0.005	0.005	0.776	0.01	0.06%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	—	0.334	0.001	0.001	0.194	0.01	0.05%
DIBENZO(a,h)ANTHRACENE	X	NR	—	NR	—	0.130	0.001	0.001	0.078	0.01	0.12%
AROCLOR-1254	X	NR	—	NR	—	0.429	0.002	0.002	0.361	0.01	0.05%
BENZO(b)FLUORANTHENE	X	NR	—	NR	—	0.855	0.003	0.003	0.774	<0.01	0.04%
CADMIUM		ND	—	NR	—	3.054	0.012	0.012	3.115	<0.01	0.03%
CHRYSENE	X	NR	—	NR	—	0.577	0.002	0.002	0.776	<0.01	0.02%
BENZO(a)ANTHRACENE	X	NR	—	NR	—	0.526	0.002	0.002	0.776	<0.01	0.02%
BENZO(ghi)PERYLENE	X	NR	—	NR	—	0.292	0.001	0.001	0.776	<0.01	0.01%
FLUORENE	X	NR	—	NR	—	0.232	0.001	0.001	0.774	<0.01	0.01%
NICKEL	X	ND	—	NR	—	11.325	0.045	0.045	146.122	<0.01	<0.01%
DI-n-OCTYL PHTHALATE	X	NR	—	NR	—	0.658	0.003	0.003	99.060	<0.01	<0.01%

Summary of Ecotoxicological Risk to American Kestrels in the OU2 903 Pad Source Area at RFETS

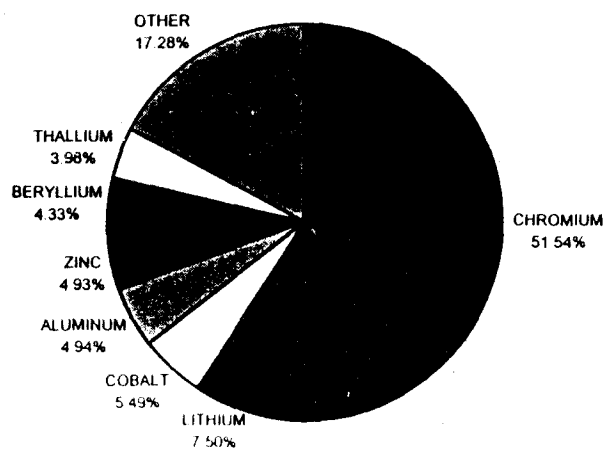


Summary of Ecotoxicological Risk to American Kestrels in the OU2 903 Pad Source Area at RFETS

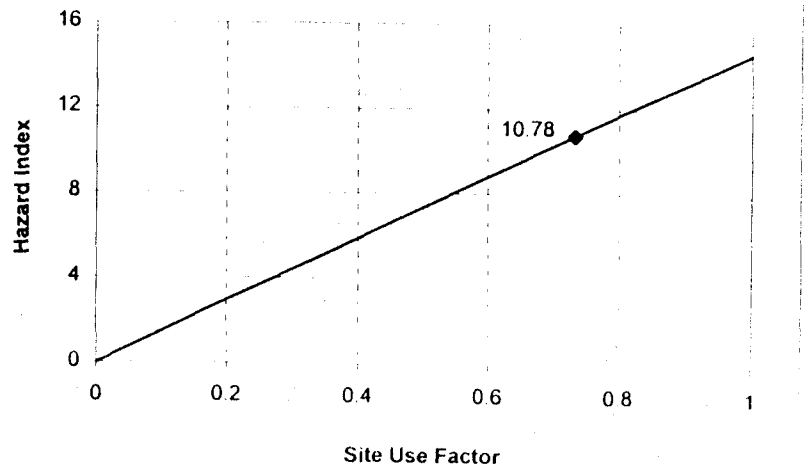
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



% Contributions of PCOCs to Total Risk



Hazard Index versus Site Use Factor



Summary of Ecotoxicological Risk to American Kestrels in the OU2 903 Pad Source Area at RFETS

AMERICAN KESTRELS OU2 903 PAD		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte[1]	PCOC for OU2	IR = 0.140 SUF = 0.733		IR = 0.150 SUF = 0.733		IR = 0.008 SUF = 0.733					
NICKEL		NR	—	NR	—	26.987	0.158	0.158	146.122	<0.01	0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	—	0.248	0.001	0.001	1.204	<0.01	0.01%
ACENAPHTHENE		NR	—	NR	—	0.186	0.001	0.001	77.625	<0.001	<0.01%

[1] Chromium concentration in terrestrial arthropods is estimated from tissue:soil ratios in the East Trenches source area.

HAZARD INDEX 10.78

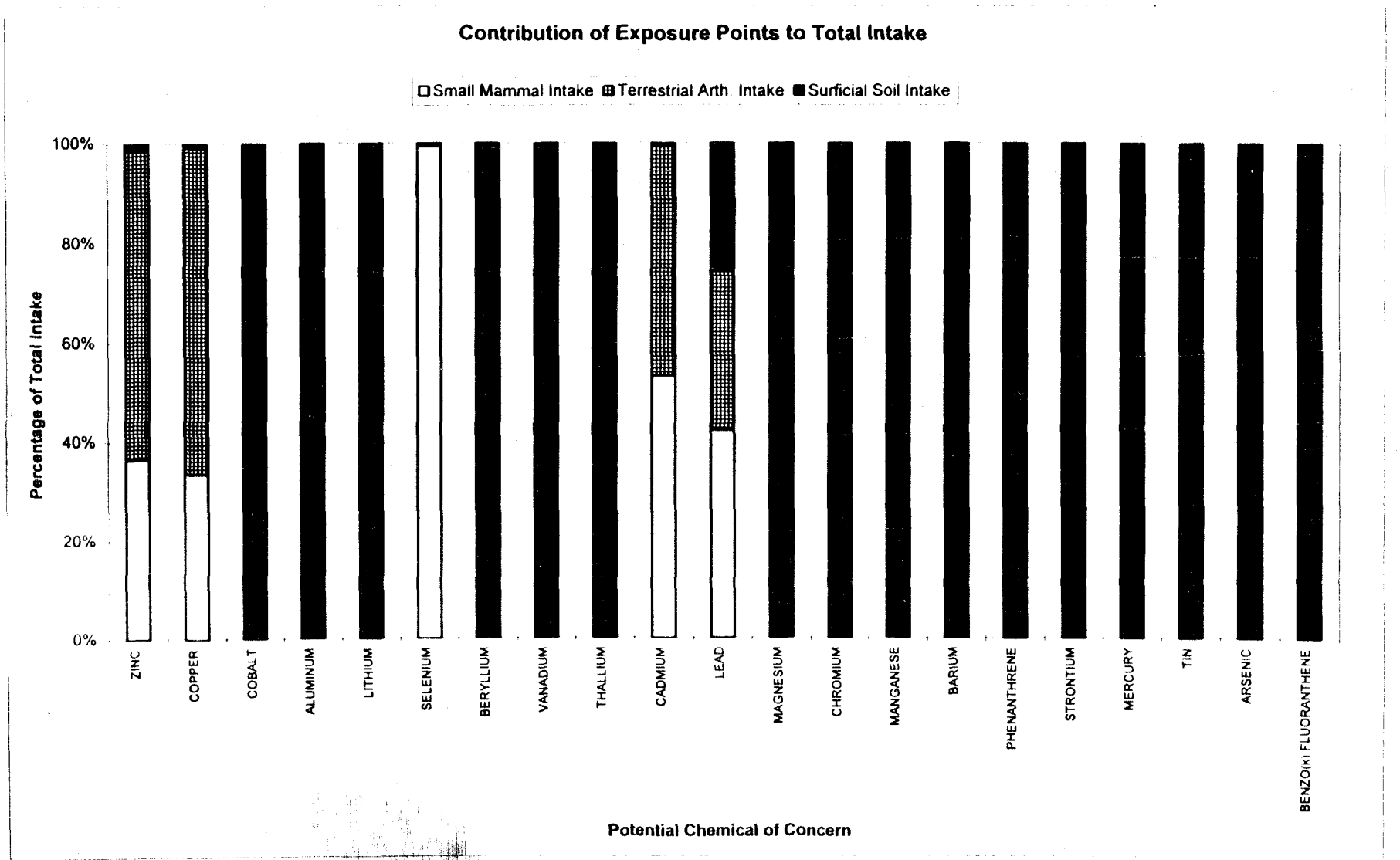
Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

Summary of Ecotoxicological Risk to American Kestrels in the OU2 903 Pad Source Area at RFETS

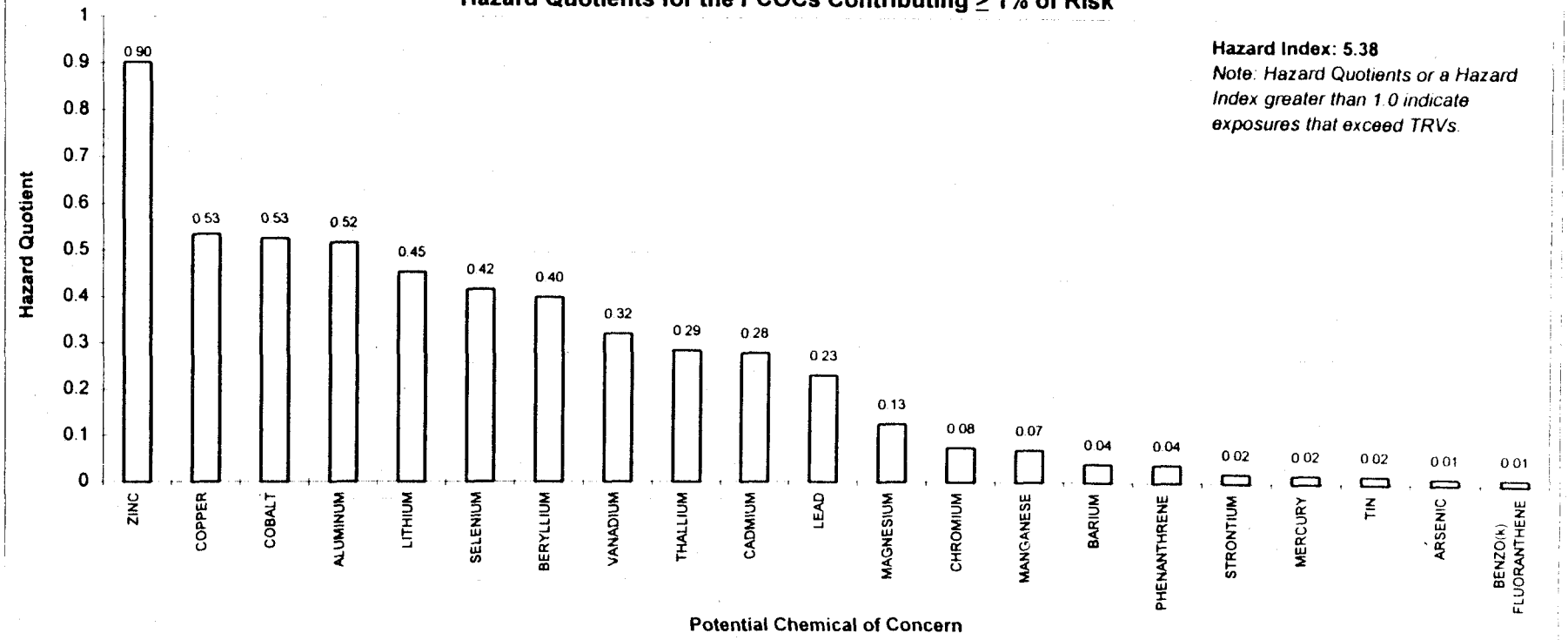
AMERICAN KESTRELS OU2 903 PAD		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte[1]	PCOC for OU2	IR = 0.140 SUF = 0.733		IR = 0.150 SUF = 0.733		IR = 0.008 SUF = 0.733					
CHROMIUM	X	4.600	0.472	131.000	11.633	26.789	0.157	12.262	2.207	5.56	51.54%
LITHIUM		NR	—	NR	—	13.592	0.080	0.080	0.099	0.81	7.50%
COBALT		NR	—	NR	—	7.671	0.045	0.045	0.076	0.59	5.49%
ALUMINUM		NR	—	NR	—	11886.180	69.701	69.701	130.867	0.53	4.94%
ZINC		154.647	15.870	36.600	4.024	72.699	0.426	20.320	38.207	0.53	4.93%
BERYLLIUM		NR	—	NR	—	1.200	0.007	0.007	0.015	0.47	4.33%
THALLIUM		NR	—	NR	—	0.430	0.003	0.003	0.007	0.43	3.98%
SELENIUM		3.059	0.314	ND	—	0.620	0.004	0.318	0.820	0.39	3.60%
VANADIUM		NR	—	NR	—	35.681	0.209	0.209	0.616	0.34	3.15%
COPPER		19.385	1.989	67.300	7.400	21.815	0.128	9.517	33.680	0.28	2.62%
LEAD	X	5.567	0.571	ND	—	32.367	0.190	0.761	3.850	0.20	1.83%
MAGNESIUM		NR	—	NR	—	3426.354	20.092	20.092	127.452	0.16	1.46%
CADMIUM		3.448	0.354	ND	—	0.920	0.005	0.359	3.115	0.12	1.07%
MANGANESE		NR	—	NR	—	318.236	1.866	1.866	21.089	0.09	0.82%
BARIUM		NR	—	NR	—	143.681	0.843	0.843	21.155	0.04	0.37%
PHENANTHRENE	X	NR	—	NR	—	0.556	0.003	0.003	0.077	0.04	0.36%
BENZO(k) FLUORANTHENE	X	NR	—	NR	—	0.311	0.002	0.002	0.077	0.03	0.24%
BENZO(a)PYRENE	X	NR	—	NR	—	0.320	0.002	0.002	0.078	0.03	0.24%
MERCURY		ND	—	ND	—	0.060	3.52E-04	3.52E-04	0.014	0.03	0.23%
STRONTIUM		NR	—	NR	—	43.040	0.252	0.252	14.151	0.02	0.17%
TIN		NR	—	NR	—	33.323	0.195	0.195	11.455	0.02	0.16%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	—	0.353	0.002	0.002	0.121	0.02	0.15%
ANTHRACENE		NR	—	NR	—	0.201	0.001	0.001	0.078	0.01	0.12%
DIBENZO(a,h)ANTHRACENE		NR	—	NR	—	0.092	0.001	0.001	0.078	0.01	0.12%
ARSENIC		NR	—	NR	—	3.998	0.023	0.023	1.846	0.01	0.12%
NITRATE/NITRITE		NR	—	NR	—	3.106	0.018	0.018	2.007	0.01	0.08%
MOLYBDENUM		NR	—	NR	—	3.000	0.018	0.018	2.497	0.01	0.07%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	—	0.188	0.001	0.001	0.194	0.01	0.05%
FLUORANTHENE	X	NR	—	NR	—	0.689	0.004	0.004	0.776	0.01	0.05%
PYRENE	X	NR	—	NR	—	0.644	0.004	0.004	0.776	0.01	0.05%
AROCLOR-1248		NR	—	NR	—	0.211	0.001	0.001	0.361	<0.01	0.03%
AROCLOR-1254	X	NR	—	NR	—	0.208	0.001	0.001	0.361	<0.01	0.03%
BENZO(b)FLUORANTHENE	X	NR	—	NR	—	0.337	0.002	0.002	0.774	<0.01	0.02%
CHRYSENE	X	NR	—	NR	—	0.341	0.002	0.002	0.776	<0.01	0.02%
BENZO(a)ANTHRACENE	X	NR	—	NR	—	0.334	0.002	0.002	0.776	<0.01	0.02%
FLUORENE		NR	—	NR	—	0.190	0.001	0.001	0.774	<0.01	0.01%
BENZO(ghi)PERYLENE	X	NR	—	NR	—	0.191	0.001	0.001	0.776	<0.01	0.01%

Summary of Ecotoxicological Risk to American Kestrels in the OU1 881 Hillside Source Area at RFETS

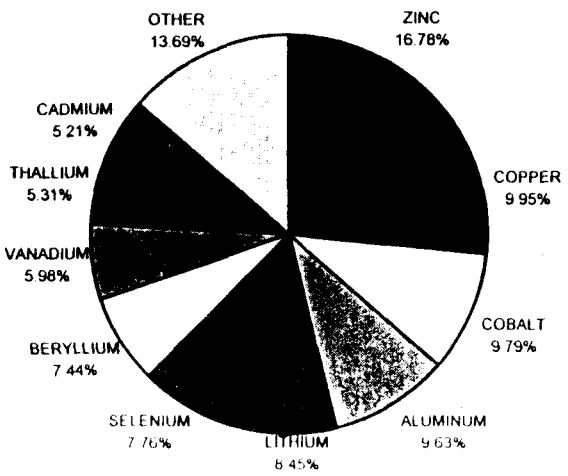


Summary of Ecotoxicological Risk to American Ke..rels in the OU1 881 Hillside Source Area at RFETS

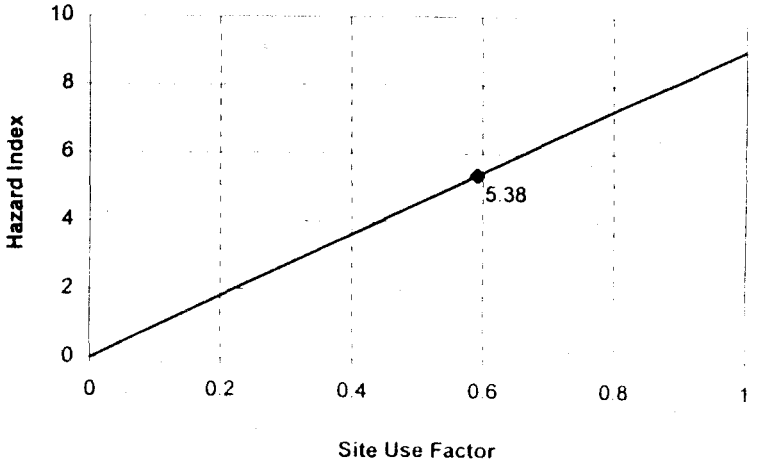
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



% Contributions of PCOCs to Total Risk



Hazard Index versus Site Use Factor



Summary of Ecotoxicological Risk to American Kestrels in the OU1 881 Hillside Source Area at RFETS

AMERICAN KESTRELS OU1 881 HILLSIDE		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU1	IR = 0.140 SUF = 0.592		IR = 0.150 SUF = 0.592		IR = 0.008 SUF = 0.592					
ACENAPHTHENE	X	NR	—	NR	—	0.195	0.001	0.001	77.625	<0.01	<0.01%
NAPHTHALENE	X	NR	—	NR	—	0.110	0.001	0.001	77.625	<0.01	<0.01%

HAZARD INDEX 5.38

Notes:

RFETS = Rocky Flats Environmental Technology Site
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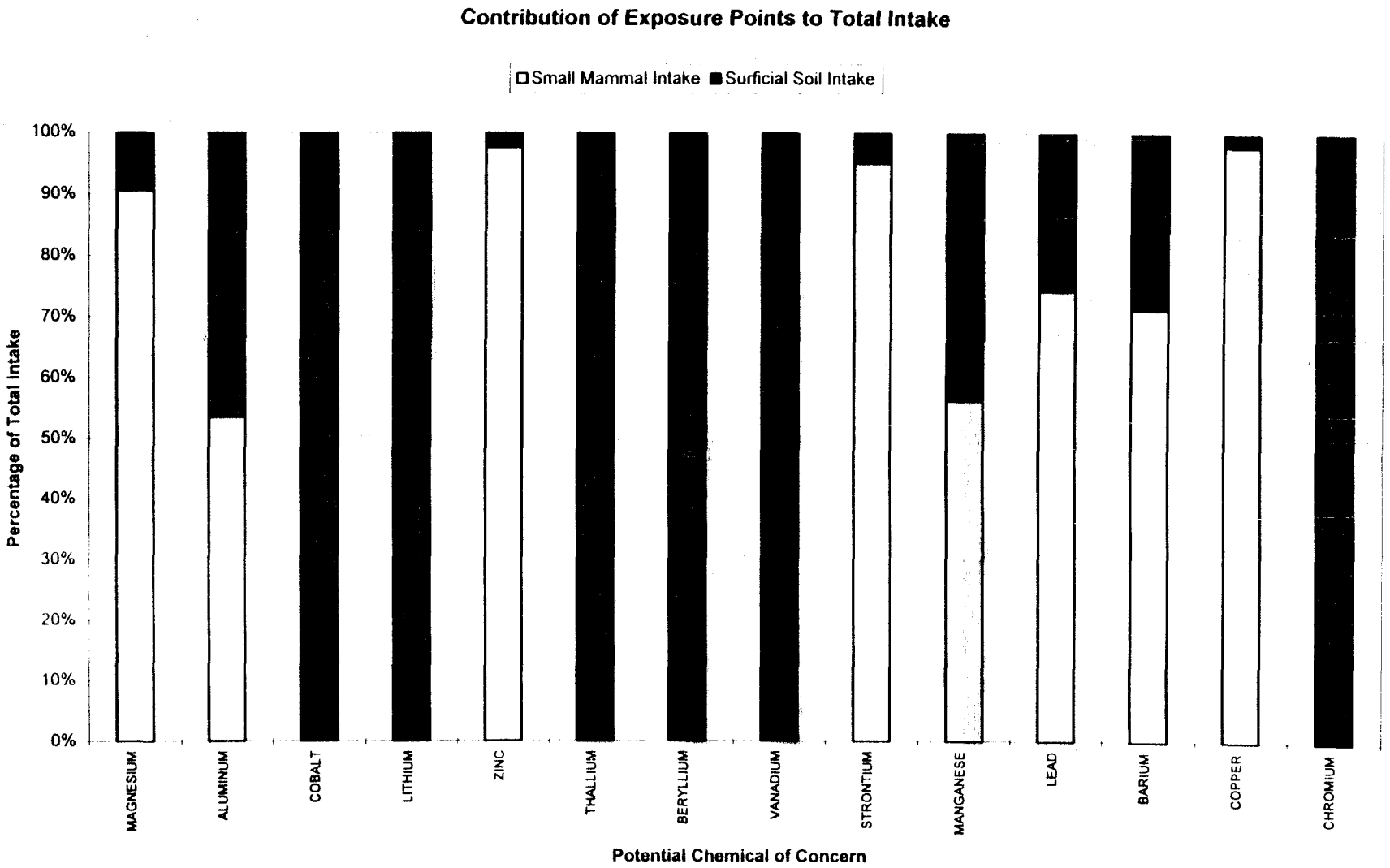
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to American Kestrels in the OU1 881 Hillside Source Area at RFETS

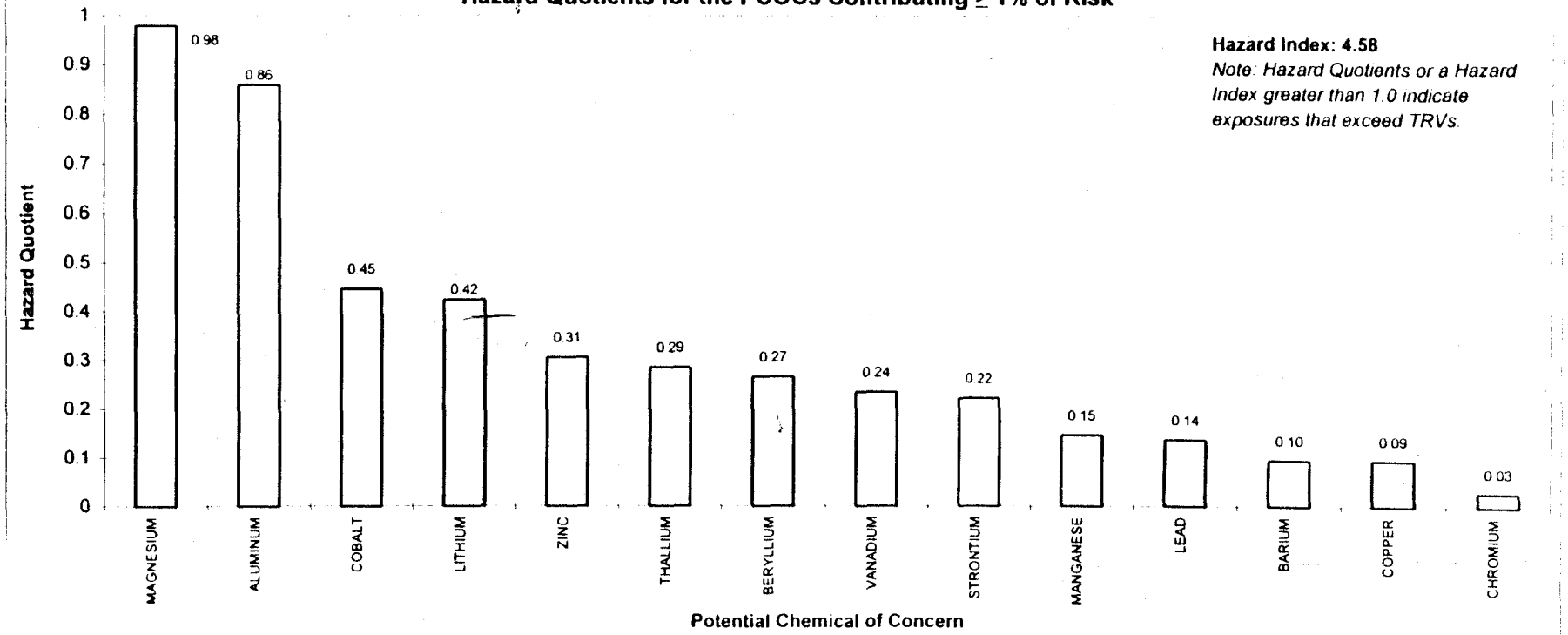
AMERICAN KESTRELS OU1 881 HILLSIDE		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU1	IR = 0.140 SUF = 0.592		IR = 0.150 SUF = 0.592		IR = 0.008 SUF = 0.592					
ZINC		151.809	12.582	242.000	21.490	85.548	0.405	34.477	38.207	0.90	16.78%
COPPER		72.817	6.035	133.000	11.810	35.484	0.168	18.014	33.680	0.53	9.95%
COBALT		NR	—	NR	—	8.343	0.040	0.040	0.076	0.53	9.79%
ALUMINUM		NR	—	NR	—	14308.320	67.764	67.764	130.867	0.52	9.63%
LITHIUM		NR	—	NR	—	9.473	0.045	0.045	0.099	0.45	8.45%
SELENIUM		4.092	0.339	ND	—	0.511	0.002	0.342	0.820	0.42	7.76%
BERYLLIUM		NR	—	NR	—	1.257	0.006	0.006	0.015	0.40	7.44%
VANADIUM		NR	—	NR	—	41.858	0.198	0.198	0.616	0.32	5.98%
THALLIUM		NR	—	NR	—	0.510	0.002	0.002	0.007	0.29	5.31%
CADMIUM		5.607	0.465	4.567	0.406	0.611	0.003	0.873	3.115	0.28	5.21%
LEAD		4.542	0.376	3.258	0.289	48.003	0.227	0.893	3.850	0.23	4.31%
MAGNESIUM		NR	—	NR	—	3418.568	16.190	16.190	127.452	0.13	2.36%
CHROMIUM		ND	—	ND	—	34.997	0.166	0.166	2.207	0.08	1.40%
MANGANESE		NR	—	NR	—	312.554	1.480	1.480	21.089	0.07	1.31%
BARIUM		NR	—	NR	—	179.137	0.848	0.848	21.155	0.04	0.75%
PHENANTHRENE	X	NR	—	NR	—	0.559	0.003	0.003	0.077	0.04	0.72%
STRONTIUM		NR	—	NR	—	61.651	0.292	0.292	14.151	0.02	0.38%
MERCURY		ND	—	ND	—	0.054	2.55E-04	2.55E-04	0.014	0.02	0.34%
TIN		NR	—	NR	—	43.094	0.204	0.204	11.455	0.02	0.33%
ARSENIC		NR	—	NR	—	5.377	0.025	0.025	1.846	0.01	0.25%
BENZO(k) FLUORANTHENE	X	NR	—	NR	—	0.297	0.001	0.001	0.077	0.01	0.24%
BENZO(a)PYRENE	X	NR	—	NR	—	0.311	0.001	0.001	0.078	0.01	0.24%
ANTHRACENE	X	NR	—	NR	—	0.202	0.001	0.001	0.078	0.01	0.24%
DIBENZO(a,h)ANTHRACENE	X	NR	—	NR	—	0.092	4.36E-04	4.36E-04	0.078	0.01	0.10%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	—	0.204	0.001	0.001	0.194	0.01	0.10%
FLUORANTHENE	X	NR	—	NR	—	0.762	0.004	0.004	0.776	0.01	0.10%
NITRATE/NITRITE		NR	—	NR	—	2.111	0.010	0.010	2.007	<0.01	0.09%
PYRENE	X	NR	—	NR	—	0.693	0.003	0.003	0.776	<0.01	0.07%
MOLYBDENUM		NR	—	NR	—	1.926	0.009	0.009	2.497	<0.01	0.07%
AROCLOR-1254	X	NR	—	NR	—	0.257	0.001	0.001	0.361	<0.01	0.05%
AROCLOR-1248	X	NR	—	NR	—	0.123	0.001	0.001	0.361	<0.01	0.05%
CHRYSENE	X	NR	—	NR	—	0.361	0.002	0.002	0.776	<0.01	0.05%
BENZO(a)ANTHRACENE	X	NR	—	NR	—	0.327	0.002	0.002	0.776	<0.01	0.05%
BENZO(b)FLUORANTHENE	X	NR	—	NR	—	0.314	0.001	0.001	0.774	<0.01	0.02%
FLUORENE	X	NR	—	NR	—	0.193	0.001	0.001	0.774	<0.01	0.02%
BENZO(ghi)PERYLENE	X	NR	—	NR	—	0.205	0.001	0.001	0.776	<0.01	0.02%
NICKEL		NR	—	NR	—	29.863	0.141	0.141	146.122	<0.01	0.02%

Summary of Ecotoxicological Risk to American Kestrels in the OU5 Ash Pits Source Area at RFETS

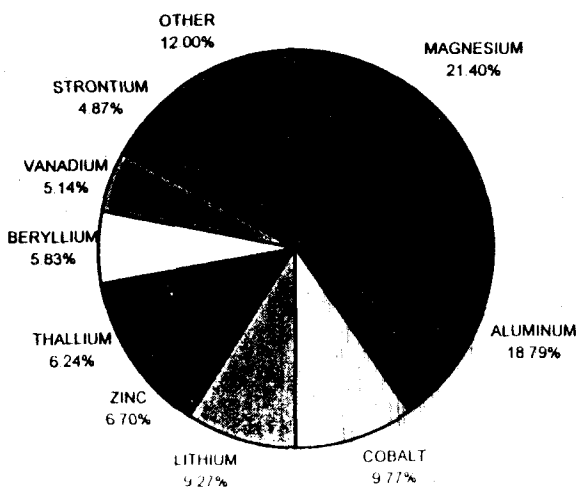


Summary of Ecotoxicological Risk to American Kestrels in the OU5 Ash Pits Source Area at RFETS

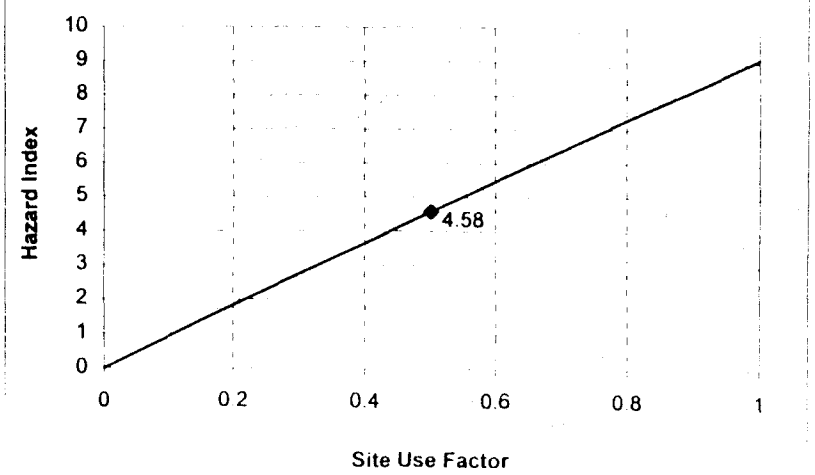
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



% Contributions of PCOCs to Total Risk

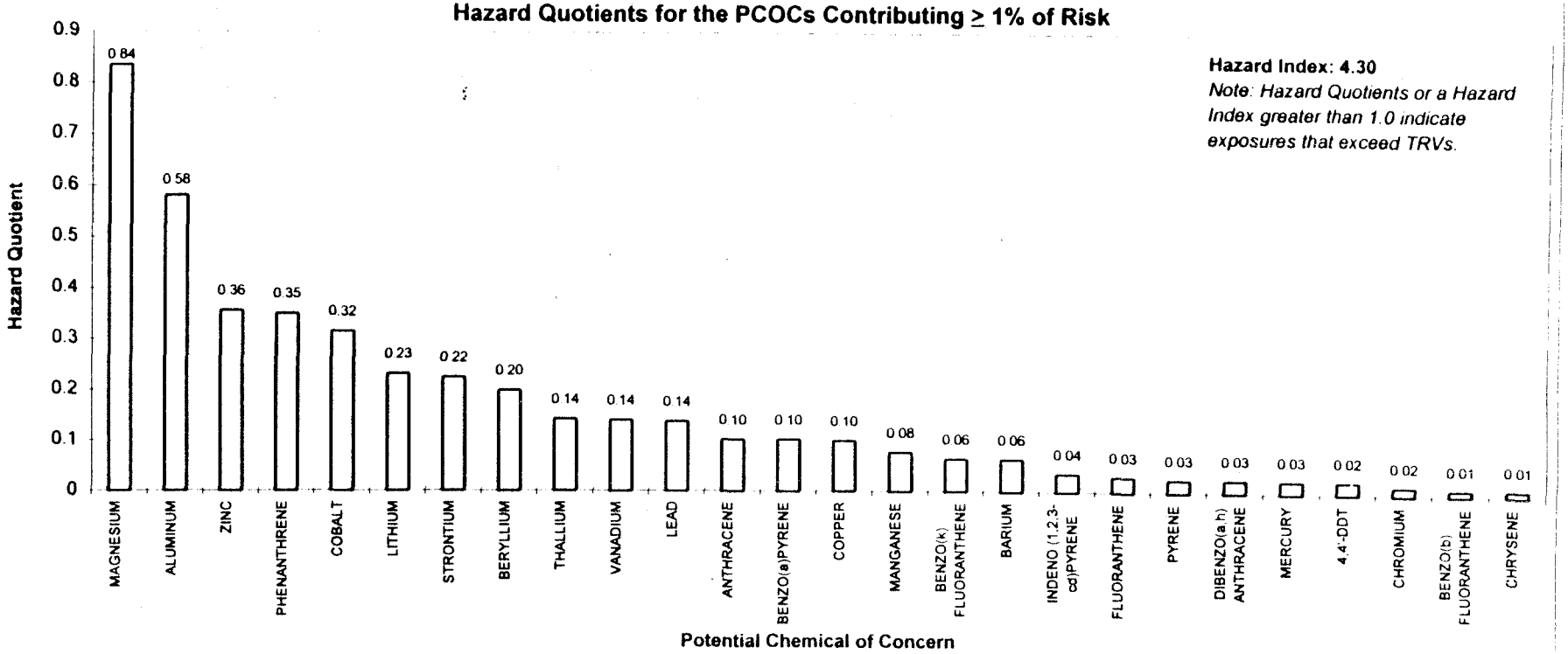


Hazard Index versus Site Use Factor

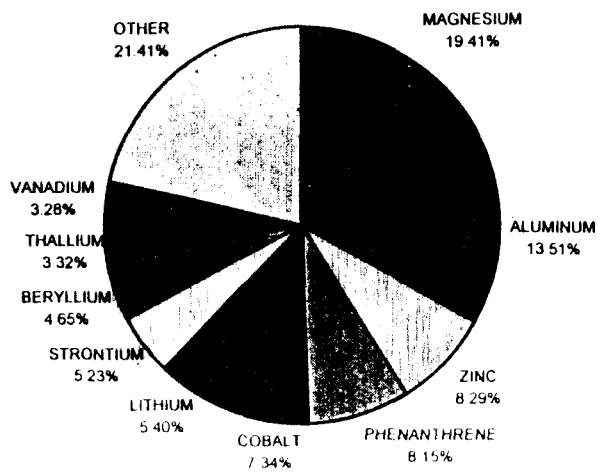


Summary of Ecotoxicological Risk to American Kestrels in the OU5 Old Landfill Source Area at RFETS

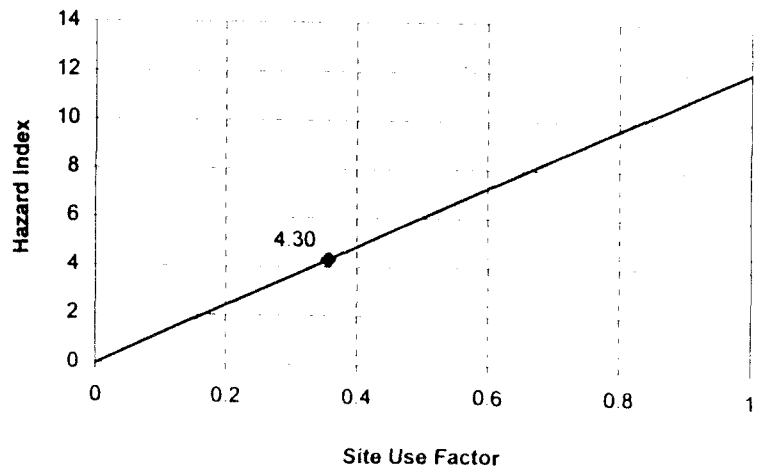
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



% Contributions of PCOCs to Total Risk



Hazard Index versus Site Use Factor



Summary of Ecotoxicological Risk to American Kestrels in the OU5 Ash Pits Source Area at RFETS

AMERICAN KESTRELS OU5 ASH PITS		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU5	IR = 0.290 SUF = 0.502		IR = I SUF = I		IR = 0.008 SUF = 0.502					
MAGNESIUM		776.812	113.088	NR	—	2929.961	11.767	124.855	127.452	0.98	21.40%
ALUMINUM		413.418	60.185	NR	—	13038.844	52.364	112.549	130.867	0.86	18.79%
COBALT	X	ND	—	NR	—	8.402	0.034	0.034	0.076	0.45	9.77%
LITHIUM	X	ND	—	NR	—	10.380	0.042	0.042	0.099	0.42	9.27%
ZINC	X	78.515	11.430	NR	—	69.631	0.280	11.710	38.207	0.31	6.70%
THALLIUM		ND	—	NR	—	0.520	0.002	0.002	0.007	0.29	6.24%
BERYLLIUM		ND	—	NR	—	0.940	0.004	0.004	0.015	0.27	5.83%
VANADIUM		ND	—	NR	—	36.213	0.145	0.145	0.616	0.24	5.14%
STRONTIUM	X	20.606	3.000	NR	—	38.768	0.156	3.155	14.151	0.22	4.87%
MANGANESE		11.936	1.738	NR	—	337.520	1.355	3.093	21.089	0.15	3.20%
LEAD	X	2.692	0.392	NR	—	33.783	0.136	0.528	3.850	0.14	3.00%
BARIUM	X	9.863	1.436	NR	—	143.888	0.578	2.014	21.155	0.10	2.08%
COPPER	X	21.419	3.118	NR	—	16.938	0.068	3.186	33.680	0.09	2.07%
CHROMIUM		ND	—	NR	—	15.956	0.064	0.064	2.207	0.03	0.63%
MERCURY	X	ND	—	NR	—	0.078	3.12E-04	3.12E-04	0.014	0.02	0.49%
ARSENIC		ND	—	NR	—	5.715	0.023	0.023	1.846	0.01	0.27%
TIN		ND	—	NR	—	16.661	0.067	0.067	11.455	0.01	0.13%
SELENIUM		ND	—	NR	—	0.410	0.002	0.002	0.820	<0.01	0.05%
CADMIUM		ND	—	NR	—	1.349	0.005	0.005	3.115	<0.01	0.04%
MOLYBDENUM		ND	—	NR	—	0.928	0.004	0.004	2.497	<0.01	0.03%
NICKEL		ND	—	NR	—	13.578	0.055	0.055	146.122	<0.01	0.01%
SILVER	X	ND	—	NR	—	1.807	0.007	0.007	2304.896	<0.01	<0.01%

HAZARD INDEX 4.58

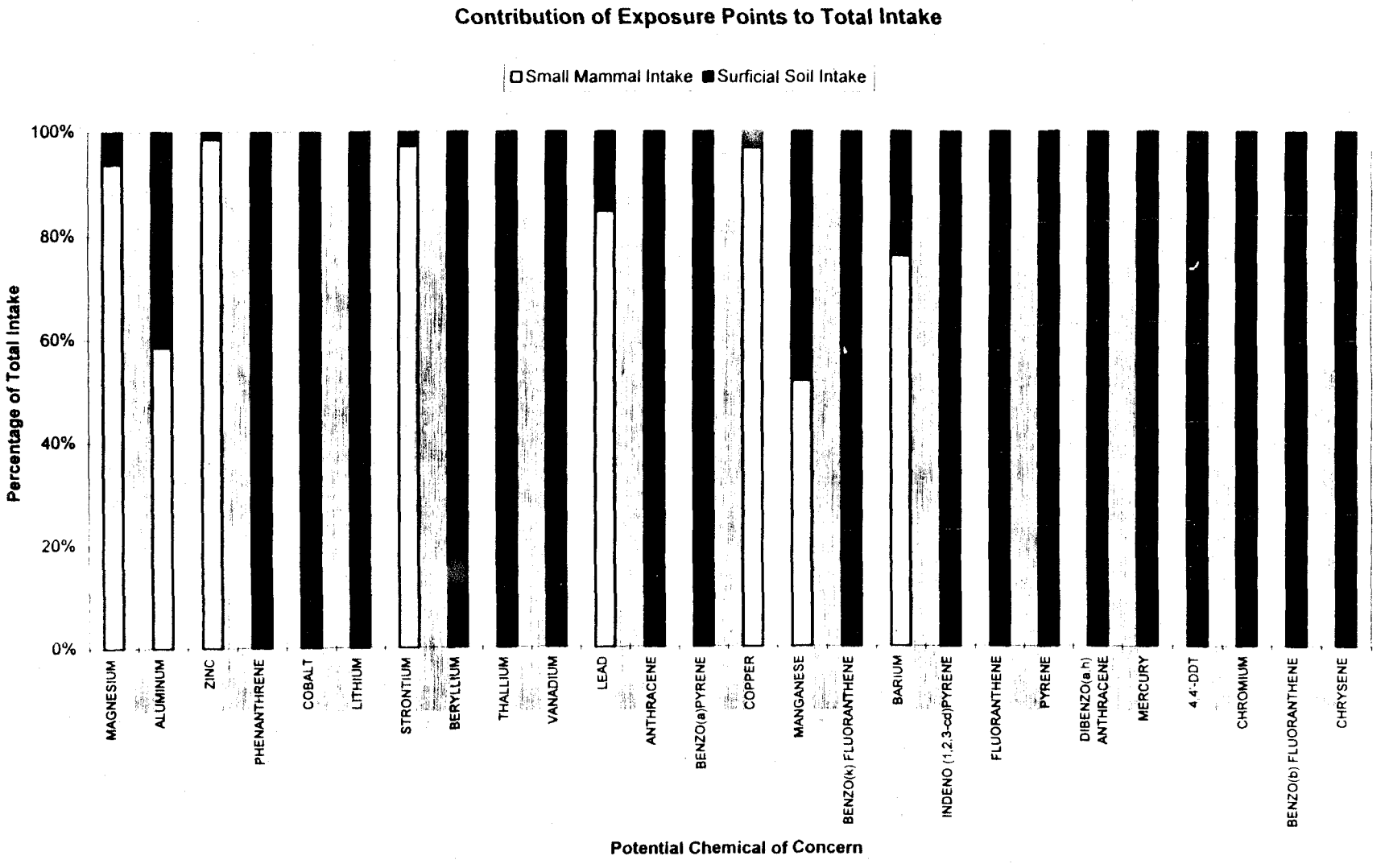
Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

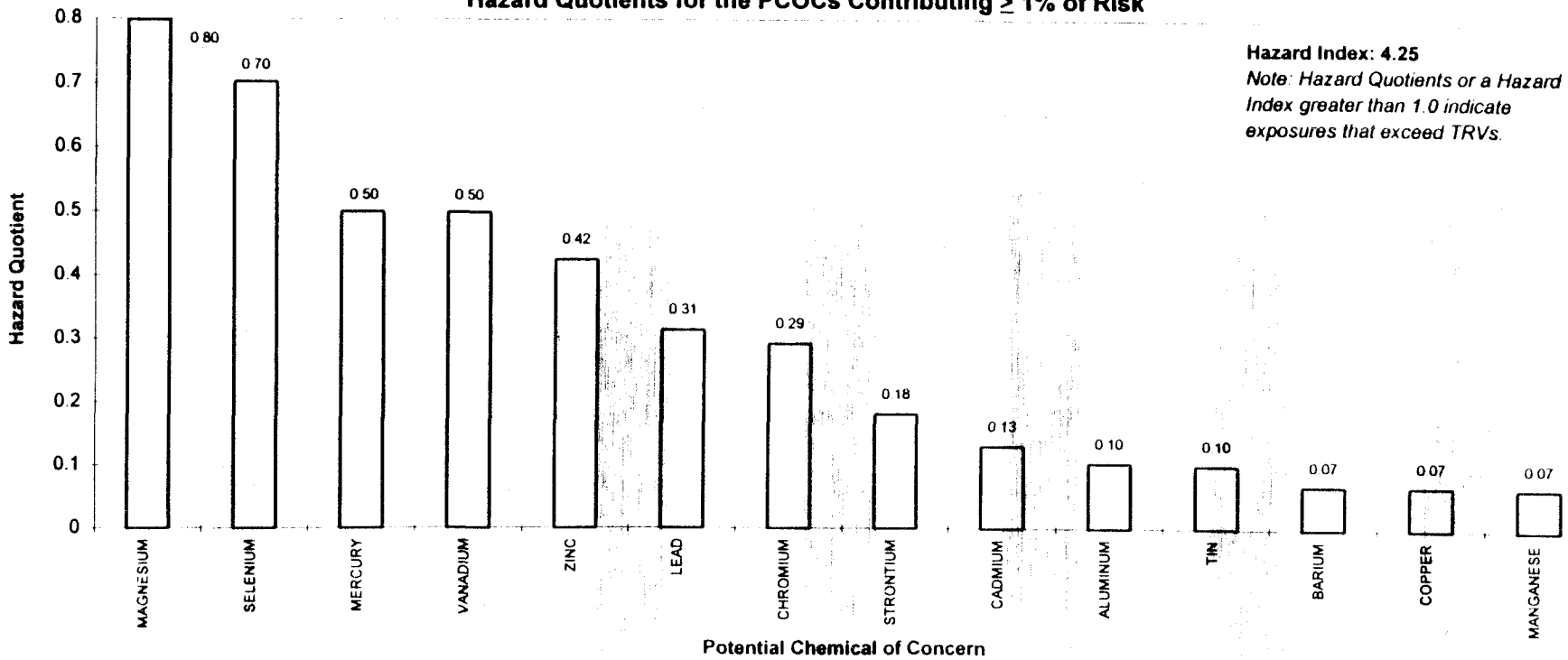
Summary of Ecotoxicological Risk to American Kestrels in the OU5 Old Landfill Source Area at RFETS

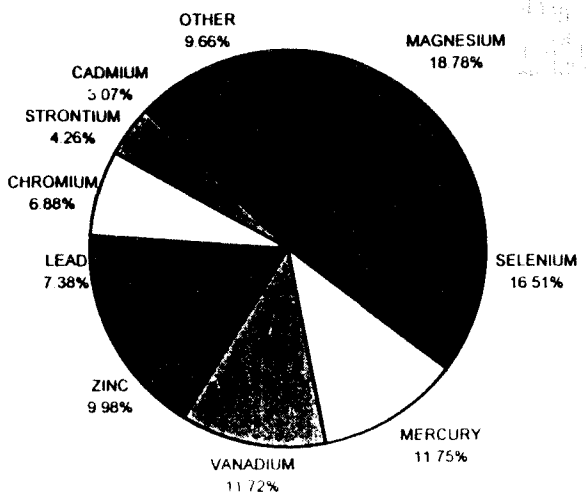
AMERICAN KESTRELS OU5 OLD LANDFILL		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU5	IR = 0.290 SUF = 0.356		IR = 1 SUF = 1		IR = 0.008 SUF = 0.356					
MAGNESIUM		967.466	99.881	NR	—	2298.534	6.546	106.427	127.452	0.84	19.41%
ALUMINUM		431.427	44.540	NR	—	11074.656	31.541	76.081	130.867	0.58	13.51%
ZINC	X	130.097	13.431	NR	—	66.571	0.190	13.621	38.207	0.36	8.29%
PHENANTHRENE	X	NR	—	NR	—	9.640	0.027	0.027	0.077	0.35	8.15%
COBALT	X	ND	—	NR	—	8.348	0.024	0.024	0.076	0.32	7.34%
LITHIUM	X	ND	—	NR	—	8.005	0.023	0.023	0.099	0.23	5.40%
STRONTIUM	X	29.983	3.095	NR	—	30.813	0.088	3.183	14.151	0.22	5.23%
BERYLLIUM		ND	—	NR	—	0.882	0.003	0.003	0.015	0.20	4.65%
THALLIUM		ND	—	NR	—	0.310	0.001	0.001	0.007	0.14	3.32%
VANADIUM		ND	—	NR	—	30.425	0.087	0.087	0.616	0.14	3.28%
LEAD	X	4.363	0.450	NR	—	28.695	0.082	0.532	3.850	0.14	3.21%
ANTHRACENE	X	NR	—	NR	—	2.816	0.008	0.008	0.078	0.10	2.38%
BENZO(a)PYRENE	X	NR	—	NR	—	2.636	0.008	0.008	0.078	0.10	2.38%
COPPER	X	31.629	3.265	NR	—	37.703	0.107	3.373	33.680	0.10	2.33%
MANGANESE		8.234	0.850	NR	—	277.661	0.791	1.641	21.089	0.08	1.81%
BENZO(k) FLUORANTHENE	X	NR	—	NR	—	1.694	0.005	0.005	0.077	0.06	1.51%
BARIUM	X	10.068	1.039	NR	—	115.593	0.329	1.369	21.155	0.06	1.50%
INDENO (1,2,3-cd)PYRENE	X	NR	—	NR	—	2.572	0.007	0.007	0.194	0.04	0.84%
FLUORANTHENE	X	NR	—	NR	—	8.267	0.024	0.024	0.776	0.03	0.72%
PYRENE	X	NR	—	NR	—	7.090	0.020	0.020	0.776	0.03	0.60%
DIBENZO(a,h) ANTHRACENE	X	NR	—	NR	—	0.758	0.002	0.002	0.078	0.03	0.60%
MERCURY	X	ND	—	NR	—	0.124	3.53E-04	3.53E-04	0.014	0.03	0.59%
4,4'-DDT	X	NR	—	NR	—	0.009	2.45E-05	2.45E-05	0.001	0.02	0.57%
CHROMIUM		ND	—	NR	—	13.088	0.037	0.037	2.207	0.02	0.39%
BENZO(b) FLUORANTHENE	X	NR	—	NR	—	3.179	0.009	0.009	0.774	0.01	0.27%
CHRYSENE	X	NR	—	NR	—	2.987	0.009	0.009	0.776	0.01	0.27%
BENZO(a)ANTHRACENE	X	NR	—	NR	—	2.850	0.008	0.008	0.776	0.01	0.24%
FLUORENE	X	NR	—	NR	—	2.363	0.007	0.007	0.774	0.01	0.21%
ARSENIC		ND	—	NR	—	5.702	0.016	0.016	1.846	0.01	0.20%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	—	0.200	0.001	0.001	0.121	0.01	0.19%
AROCLOR-1254	X	NR	—	NR	—	0.572	0.002	0.002	0.361	0.01	0.13%
MOLYBDENUM		ND	—	NR	—	4.400	0.013	0.013	2.497	0.01	0.12%
BENZO(ghi)PERYLENE	X	NR	—	NR	—	0.922	0.003	0.003	0.776	<0.01	0.09%
NICKEL		4.800	0.496	NR	—	14.939	0.043	0.538	146.122	<0.01	0.09%
TIN		ND	—	NR	—	9.714	0.028	0.028	11.455	<0.01	0.06%
HEPTACHLOR EPOXIDE	X	NR	—	NR	—	0.004	1.23E-05	1.23E-05	0.008	<0.01	0.04%
SELENIUM		ND	—	NR	—	0.459	0.001	0.001	0.820	<0.01	0.03%

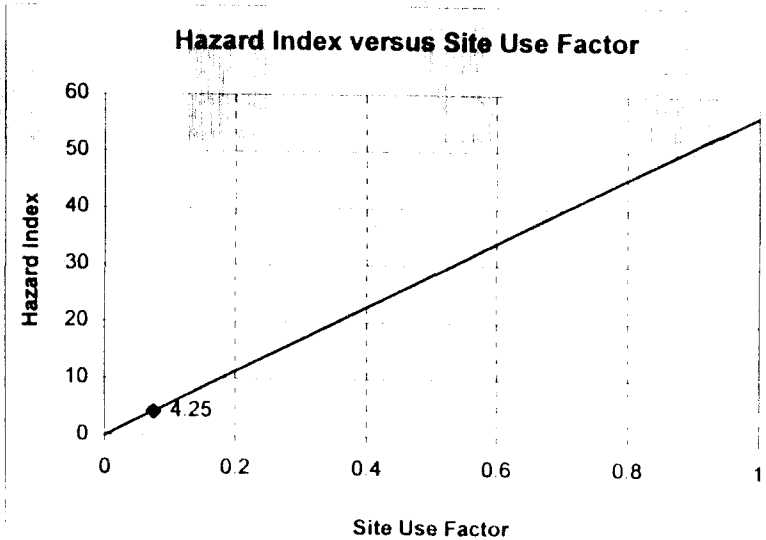
Summary of Ecotoxicological Risk to American Kes..els in the OU5 Old Landfill Source Area at RFETS



Summary of Ecotoxicological Risk to American Kestrel in the OU7 Downgradient Areas Source Area at RFETS







Summary of Ecotoxicological Risk to American Kestrels in the OU5 Old Landfill Source Area at RFETS

AMERICAN KESTRELS OU5 OLD LANDFILL		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU5	IR = 0.290 SUF = 0.356		IR = I SUF = I		IR = 0.008 SUF = 0.356					
CADMIUM		ND	—	NR	—	0.880	0.003	0.003	3.115	<0.01	0.02%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	—	0.210	0.001	0.001	1.204	<0.01	0.02%
DIELDRIN	X	NR	—	NR	—	0.009	2.63E-05	2.63E-05	0.122	<0.01	0.01%
ALDRIN	X	NR	—	NR	—	0.005	1.33E-05	1.33E-05	0.122	<0.01	<0.01%
ACENAPHTHENE	X	NR	—	NR	—	2.636	0.008	0.008	77.625	<0.01	<0.01%
NAPHTHALENE	X	NR	—	NR	—	2.498	0.007	0.007	77.625	<0.01	<0.01%
2-METHYLNAPHTHALENE	X	NR	—	NR	—	0.944	0.003	0.003	77.625	<0.01	<0.01%
SILVER	X	ND	—	NR	—	7.180	0.020	0.020	2304.896	<0.01	<0.01%
BUTYL BENZYL PHTHALATE	X	NR	—	NR	—	0.220	0.001	0.001	226.426	<0.01	<0.01%
DI-n-OCTYL PHTHALATE	X	NR	—	NR	—	0.083	2.36E-04	2.36E-04	99.060	<0.01	<0.01%

HAZARD INDEX 4.30

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
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IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to American Kestrels in the OU7 Downgradient Areas Source Area at RFETS

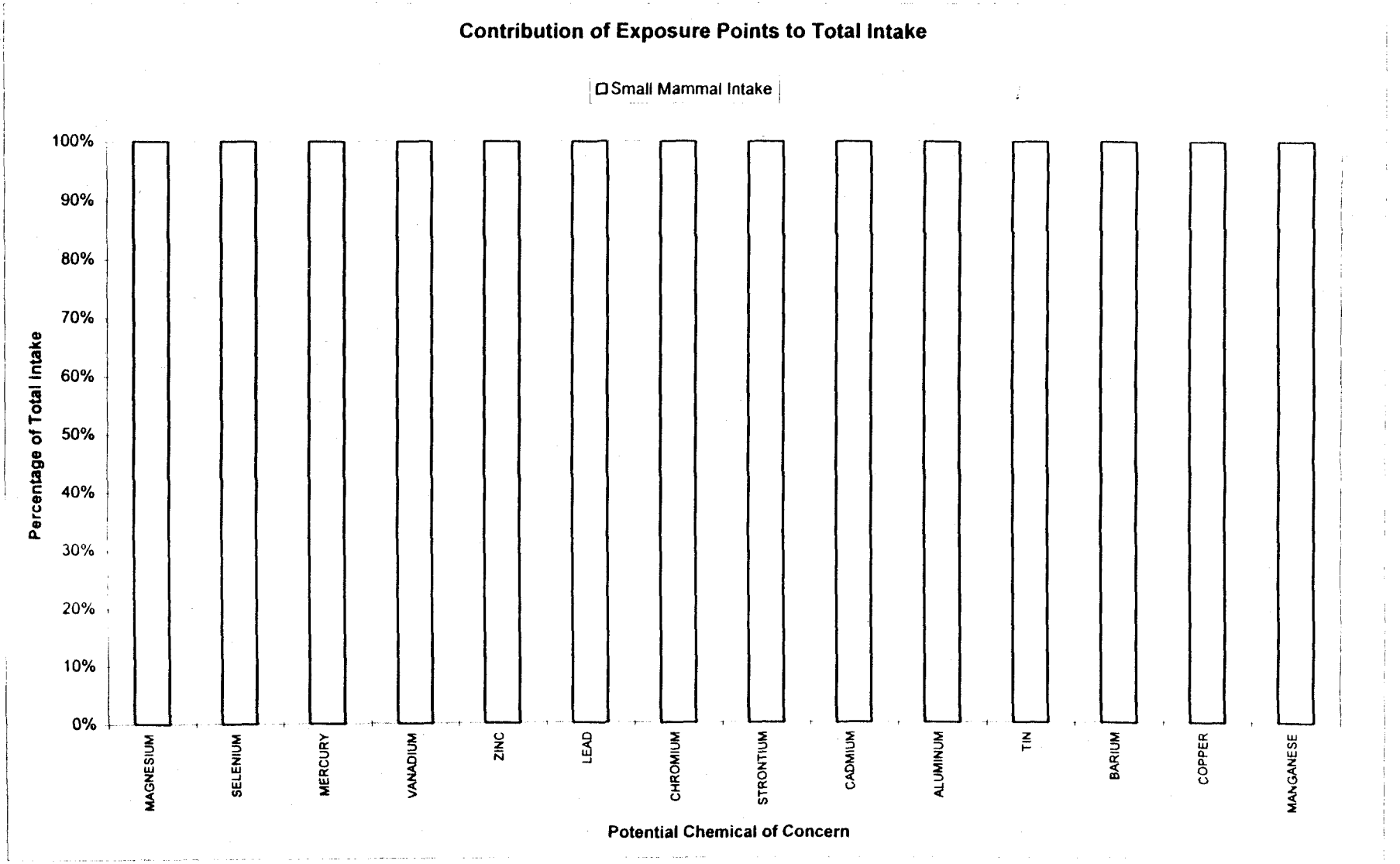
AMERICAN KESTRELS OU7 DOWNGRADIENT AREAS		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU7	IR = 0.290 SUF = 0.075		IR = I SUF = I		IR = 0.008 SUF = 0.075					
MAGNESIUM	X	4680.000	101.790	NR	—	NR	—	101.790	127.452	0.80	18.78%
SELENIUM	X	26.500	0.576	NR	—	NR	—	0.576	0.820	0.70	16.51%
MERCURY		0.300	0.007	NR	—	NR	—	0.007	0.014	0.50	11.75%
VANADIUM	X	14.100	0.307	NR	—	NR	—	0.307	0.616	0.50	11.72%
ZINC	X	746.000	16.226	NR	—	NR	—	16.226	38.207	0.42	9.98%
LEAD	X	55.600	1.209	NR	—	NR	—	1.209	3.850	0.31	7.38%
CHROMIUM	X	29.700	0.646	NR	—	NR	—	0.646	2.207	0.29	6.88%
STRONTIUM	X	118.000	2.567	NR	—	NR	—	2.567	14.151	0.18	4.26%
CADMIUM		18.700	0.407	NR	—	NR	—	0.407	3.115	0.13	3.07%
ALUMINUM	X	624.000	13.572	NR	—	NR	—	13.572	130.867	0.10	2.44%
TIN	X	52.700	1.146	NR	—	NR	—	1.146	11.455	0.10	2.35%
BARIUM	X	67.100	1.459	NR	—	NR	—	1.459	21.155	0.07	1.62%
COPPER	X	106.000	2.306	NR	—	NR	—	2.306	33.680	0.07	1.61%
MANGANESE	X	64.400	1.401	NR	—	NR	—	1.401	21.089	0.07	1.56%
NITRATE/NITRITE	X	NR	—	NR	—	10.779	0.006	0.006	2.007	<0.01	0.07%
SILVER		24.400	0.531	NR	—	NR	—	0.531	2304.896	<0.01	0.01%

HAZARD INDEX 4.25

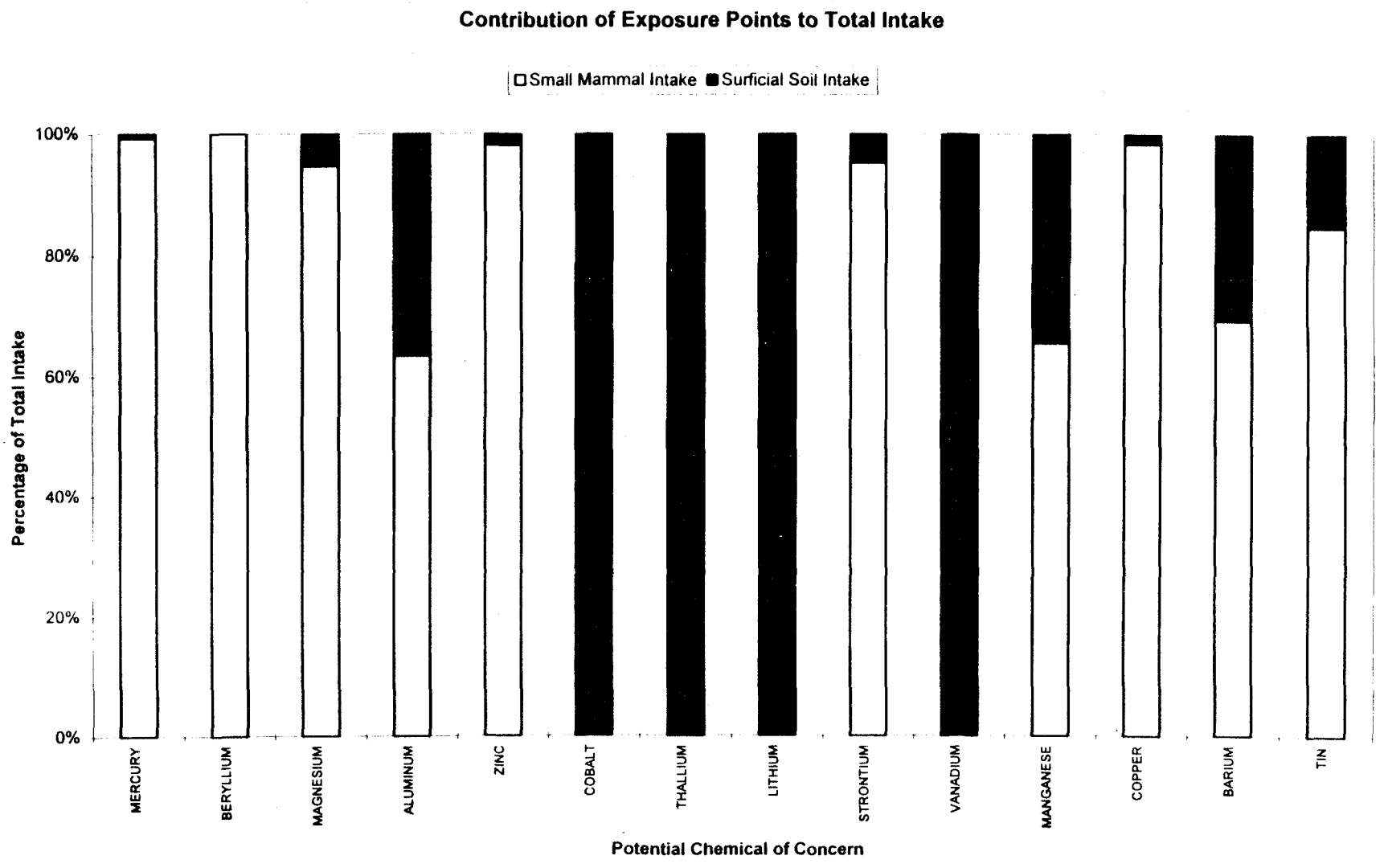
Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to American Kestrel in the OU7 Downgradient Areas Source Area at RFETS

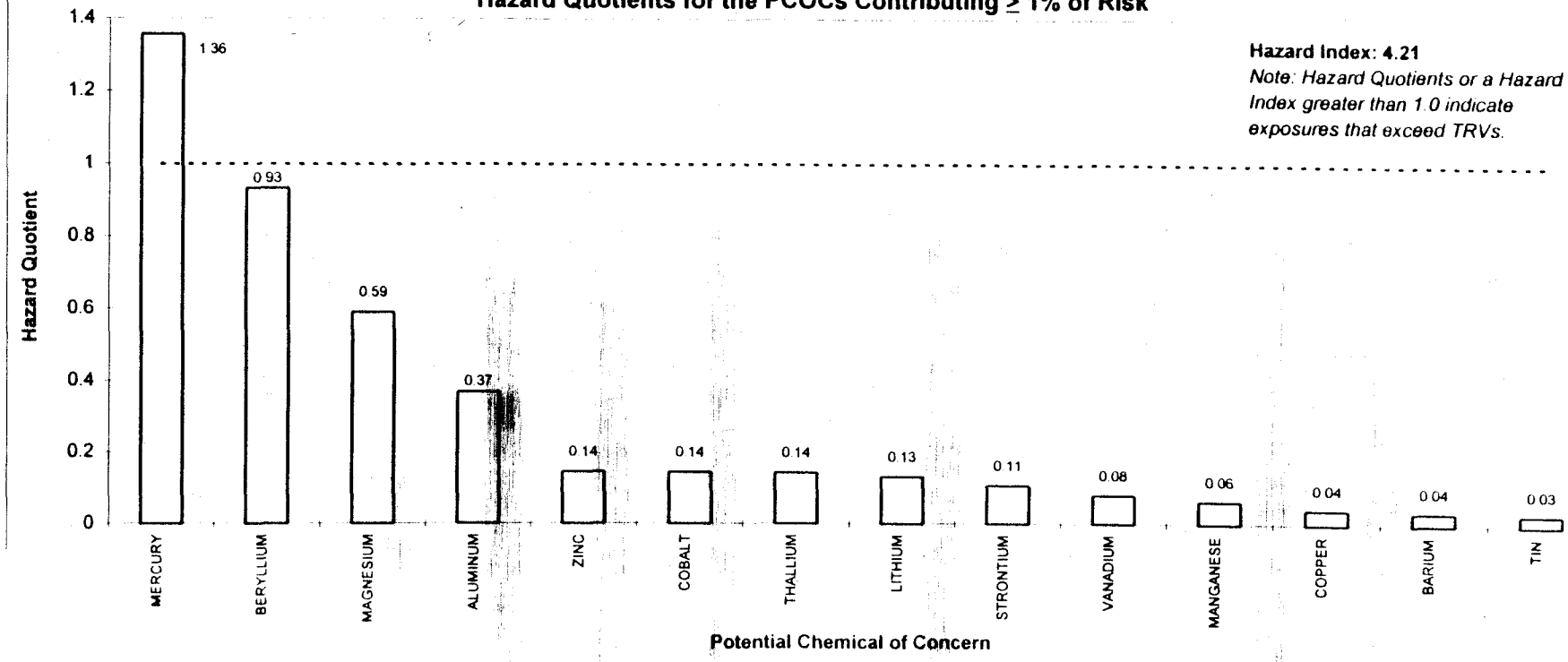


Summary of Ecotoxicological Risk to American Kestrels in the OU4 Downgradient Source Area at RFETS

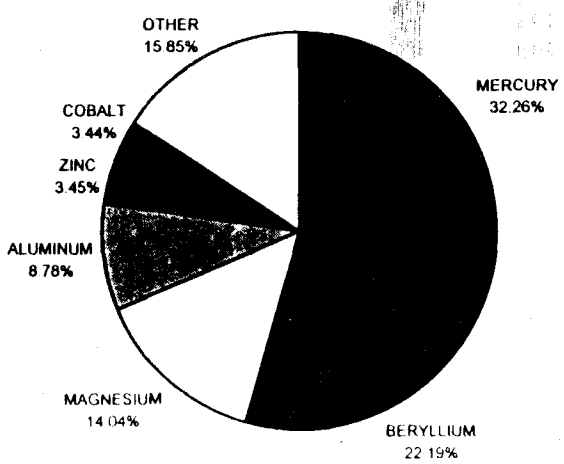


Summary of Ecotoxicological Risk to American Kes. .ls in the OU4 Downgradient Source Area at RFETS

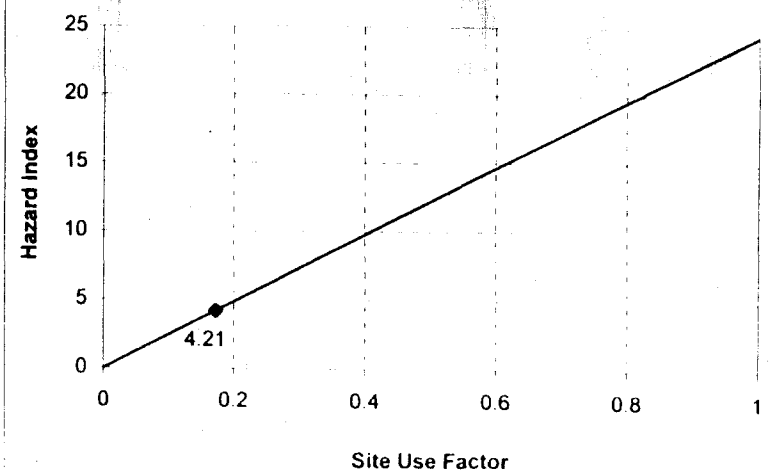
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



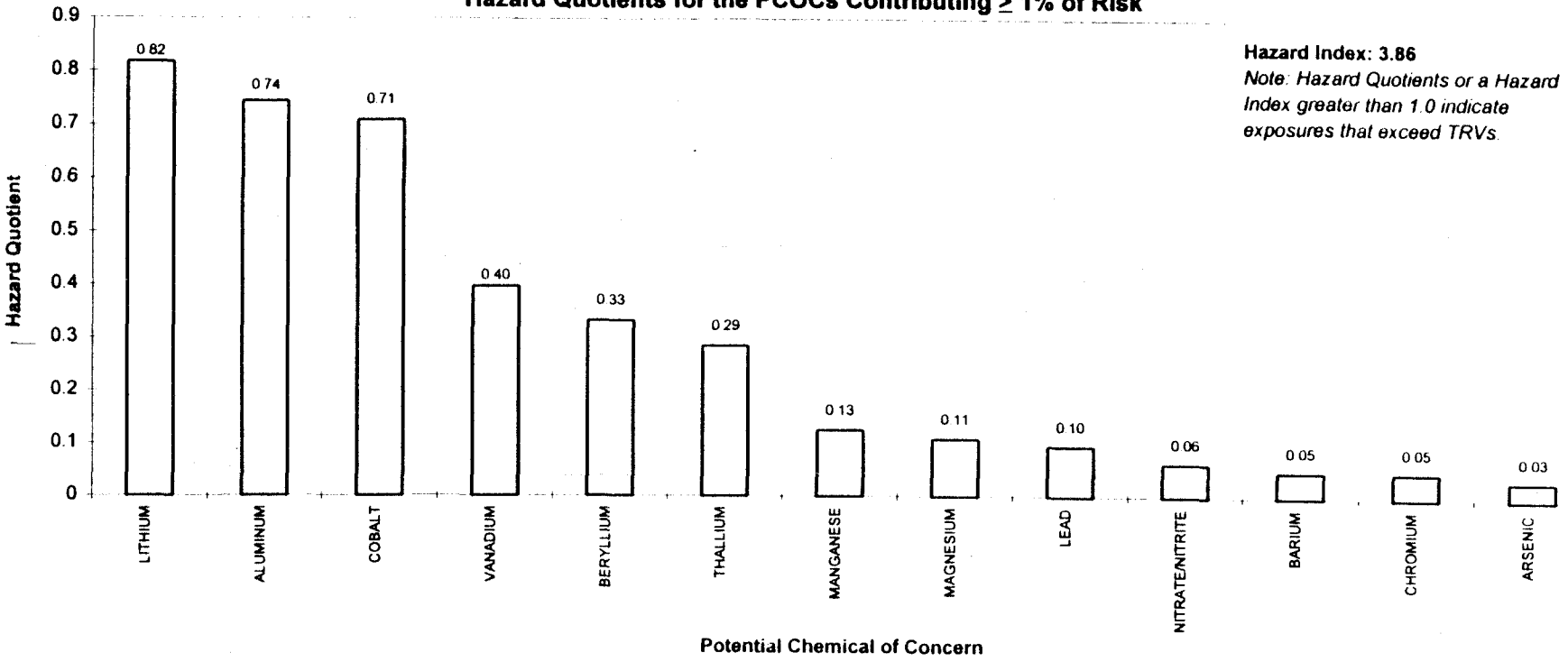
% Contributions of PCOCs to Total Risk

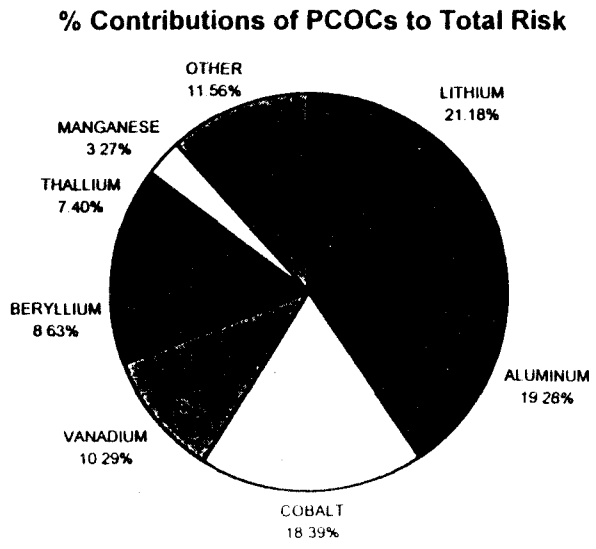


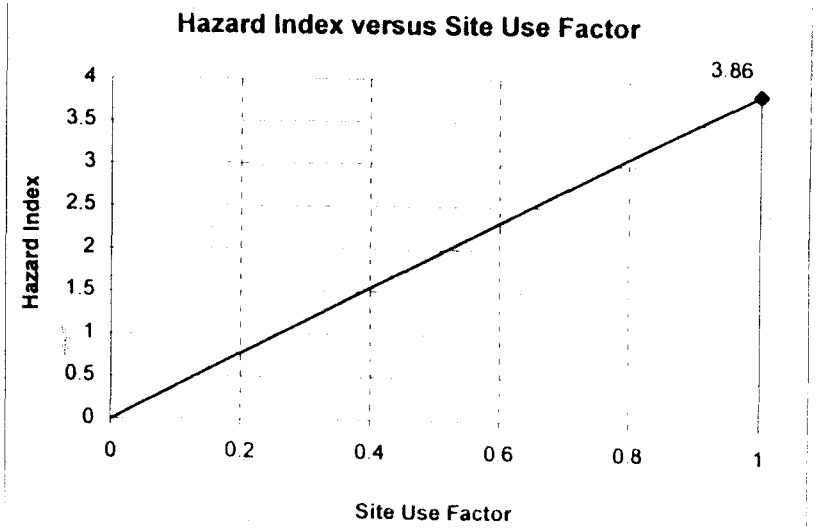
Hazard Index versus Site Use Factor



Summary of Ecotoxicological Risk to American Kestrels in the OU11 West Spray Field Source Area at RFETS







Summary of Ecotoxicological Risk to American Kestrels in the OU4 Downgradient Source Area at RFETS

AMERICAN KESTRELS OU4 DOWNGRADIENT		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU4	IR = 0.290 SUF = 0.172		IR = NR SUF = 0.172		IR = 0.008 SUF = 0.172					
MERCURY	X	0.380	0.019	NR	—	0.107	1.47E-04	0.019	0.014	1.36	32.26%
BERYLLIUM	X	0.290	0.014	NR	—	ND	—	0.014	0.015	0.93	22.19%
MAGNESIUM		1430.000	71.328	NR	—	2871.518	3.951	75.280	127.452	0.59	14.04%
ALUMINUM		614.000	30.626	NR	—	12856.399	17.690	48.317	130.867	0.37	8.78%
ZINC		109.000	5.437	NR	—	74.594	0.103	5.540	38.207	0.14	3.45%
COBALT		ND	—	NR	—	8.238	0.011	0.011	0.076	0.14	3.44%
THALLIUM		ND	—	NR	—	0.630	0.001	0.001	0.007	0.14	3.40%
LITHIUM		ND	—	NR	—	9.207	0.013	0.013	0.099	0.13	3.12%
STRONTIUM		29.000	1.447	NR	—	52.509	0.072	1.519	14.151	0.11	2.55%
VANADIUM		ND	—	NR	—	35.665	0.049	0.049	0.616	0.08	1.89%
MANGANESE		17.700	0.883	NR	—	337.070	0.464	1.347	21.089	0.06	1.52%
COPPER		27.500	1.372	NR	—	16.143	0.022	1.394	33.680	0.04	0.98%
BARIUM		10.300	0.514	NR	—	165.692	0.228	0.742	21.155	0.04	0.83%
TIN		5.900	0.294	NR	—	38.477	0.053	0.347	11.455	0.03	0.72%
CHROMIUM		ND	—	NR	—	14.049	0.019	0.019	2.207	0.01	0.20%
LEAD		ND	—	NR	—	20.053	0.028	0.028	3.850	0.01	0.17%
BENZO(a)PYRENE	X	NR	—	NR	—	0.200	2.75E-04	2.75E-04	0.078	<0.01	0.08%
ARSENIC		ND	—	NR	—	4.565	0.006	0.006	1.846	<0.01	0.08%
NITRATE/NITRITE	X	NR	—	NR	—	3.975	0.005	0.005	2.007	<0.01	0.06%
BENZO(k)FLUORANTHENE	X	NR	—	NR	—	0.130	1.79E-04	1.79E-04	0.077	<0.01	0.06%
PHENANTHRENE	X	NR	—	NR	—	0.074	1.02E-04	1.02E-04	0.077	<0.01	0.03%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	—	0.150	2.06E-04	2.06E-04	0.194	<0.01	0.03%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	—	0.079	1.09E-04	1.09E-04	0.121	<0.01	0.02%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	—	0.978	0.001	0.001	1.204	<0.01	0.02%
DIBENZO(a,h)ANTHRACENE		NR	—	NR	—	0.047	6.47E-05	6.47E-05	0.078	<0.01	0.02%
CADMIUM	X	ND	—	NR	—	1.109	0.002	0.002	3.115	<0.01	0.02%
CHRYSENE	X	NR	—	NR	—	0.220	3.03E-04	3.03E-04	0.776	<0.01	0.01%
PYRENE	X	NR	—	NR	—	0.191	2.63E-04	2.63E-04	0.776	<0.01	0.01%
FLUORANTHENE	X	NR	—	NR	—	0.183	2.52E-04	2.52E-04	0.776	<0.01	0.01%
BENZO(b)FLUORANTHENE	X	NR	—	NR	—	0.182	2.50E-04	2.50E-04	0.774	<0.01	0.01%
BENZO(ghi)PERYLENE	X	NR	—	NR	—	0.170	2.34E-04	2.34E-04	0.776	<0.01	0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	—	0.160	2.20E-04	2.20E-04	0.776	<0.01	0.01%
NICKEL		ND	—	NR	—	14.767	0.020	0.020	146.122	<0.01	<0.01%
DI-n-OCTYL PHTHALATE		NR	—	NR	—	0.295	4.06E-04	4.06E-04	99.060	<0.01	<0.01%
BUTYL BENZYL PHTHALATE		NR	—	NR	—	0.170	2.34E-04	2.34E-04	226.426	<0.01	<0.01%

HAZARD INDEX 4.21

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway

NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

Summary of Ecotoxicological Risk to American Kestrels in the OU11 West Spray Field Source Area at RFETS

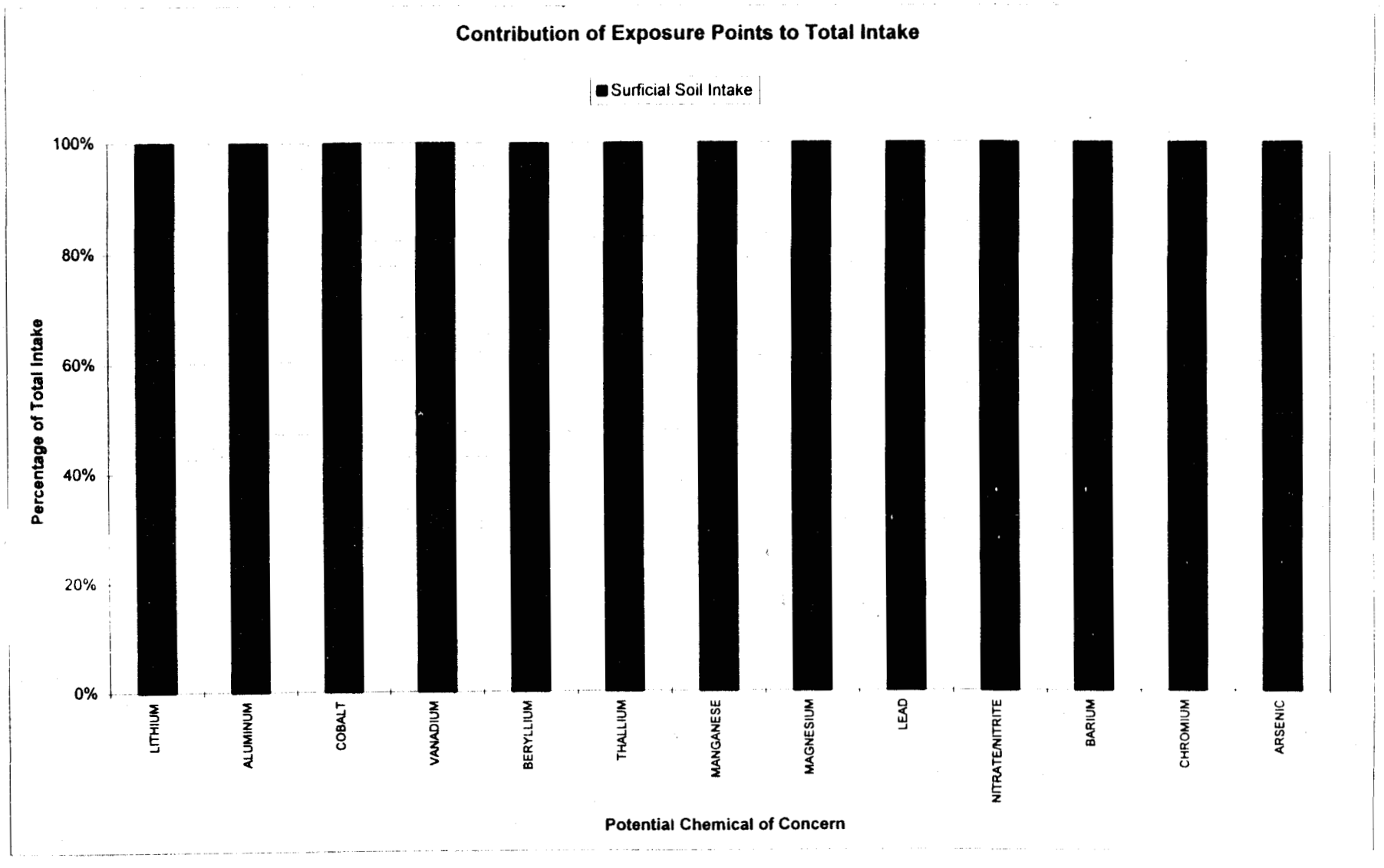
AMERICAN KESTRELS OU11 WEST SPRAY FIELD		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU11	IR = NR SUF = 1		IR = I SUF = I		IR = 0.008 SUF = 1					
LITHIUM		NR	—	NR	—	10.111	0.081	0.081	0.099	0.82	21.18%
ALUMINUM		NR	—	NR	—	12185.807	97.486	97.486	130.867	0.74	19.28%
COBALT		NR	—	NR	—	6.719	0.054	0.054	0.076	0.71	18.39%
VANADIUM		NR	—	NR	—	30.669	0.245	0.245	0.616	0.40	10.29%
BERYLLIUM		NR	—	NR	—	0.682	0.005	0.005	0.015	0.33	8.63%
THALLIUM		NR	—	NR	—	0.270	0.002	0.002	0.007	0.29	7.40%
MANGANESE		NR	—	NR	—	332.865	2.663	2.663	21.089	0.13	3.27%
MAGNESIUM		NR	—	NR	—	1746.670	13.973	13.973	127.452	0.11	2.84%
LEAD		NR	—	NR	—	46.092	0.369	0.369	3.850	0.10	2.48%
NITRATE/NITRITE		NR	—	NR	—	15.866	0.127	0.127	2.007	0.06	1.64%
BARIUM		NR	—	NR	—	130.524	1.044	1.044	21.155	0.05	1.28%
CHROMIUM		NR	—	NR	—	13.479	0.108	0.108	2.207	0.05	1.27%
ARSENIC		NR	—	NR	—	8.032	0.064	0.064	1.846	0.03	0.90%
STRONTIUM		NR	—	NR	—	23.573	0.189	0.189	14.151	0.01	0.35%
ZINC		NR	—	NR	—	44.730	0.358	0.358	38.207	0.01	0.24%
MOLYBDENUM		NR	—	NR	—	2.600	0.021	0.021	2.497	0.01	0.22%
SELENIUM		NR	—	NR	—	0.509	0.004	0.004	0.820	<0.01	0.13%
TIN		NR	—	NR	—	4.900	0.039	0.039	11.455	<0.01	0.09%
COPPER		NR	—	NR	—	13.023	0.104	0.104	33.680	<0.01	0.08%
CADMIUM		NR	—	NR	—	0.737	0.006	0.006	3.115	<0.01	0.05%
NICKEL		NR	—	NR	—	9.190	0.074	0.074	146.122	<0.01	0.01%

HAZARD INDEX 3.86

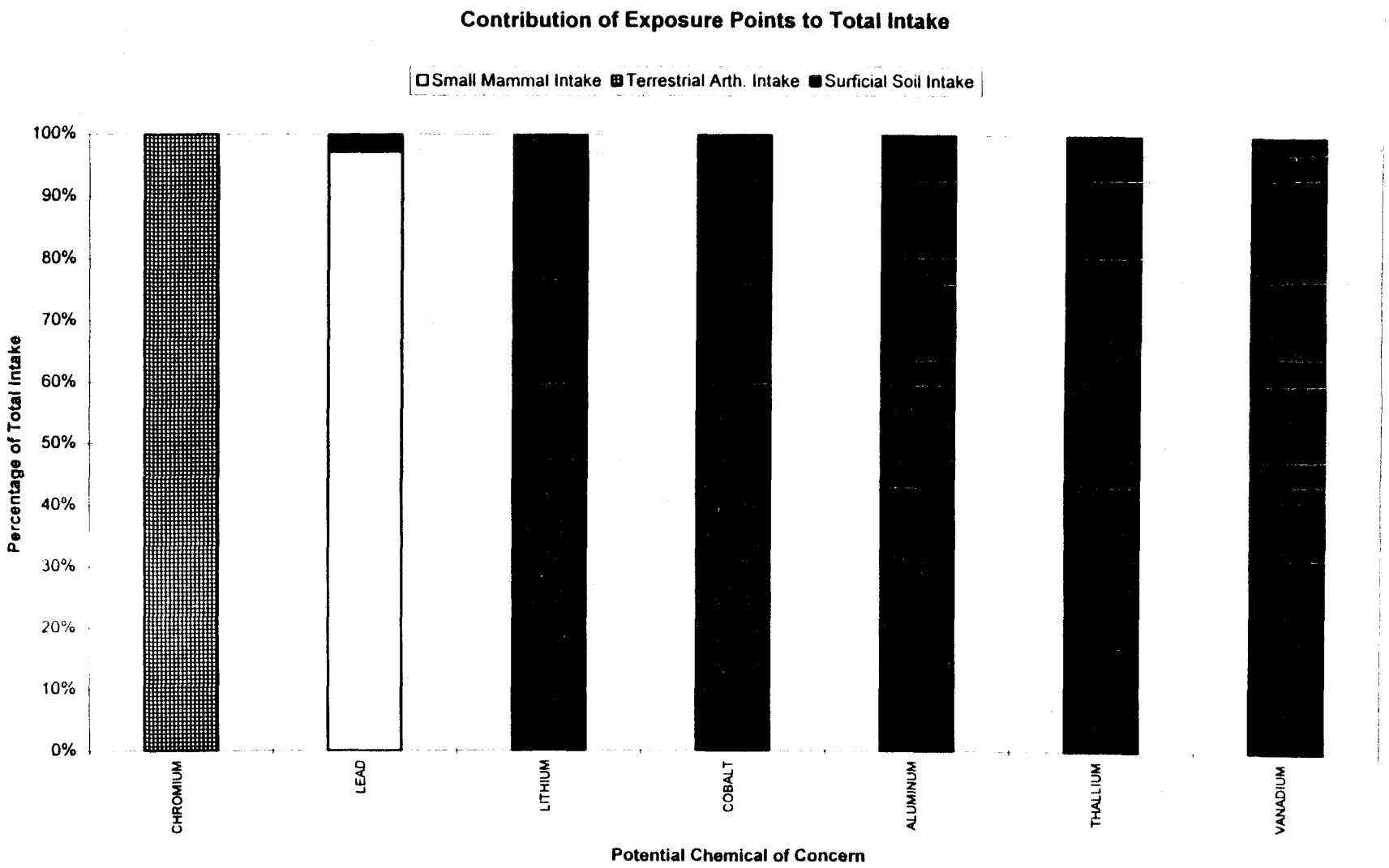
Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

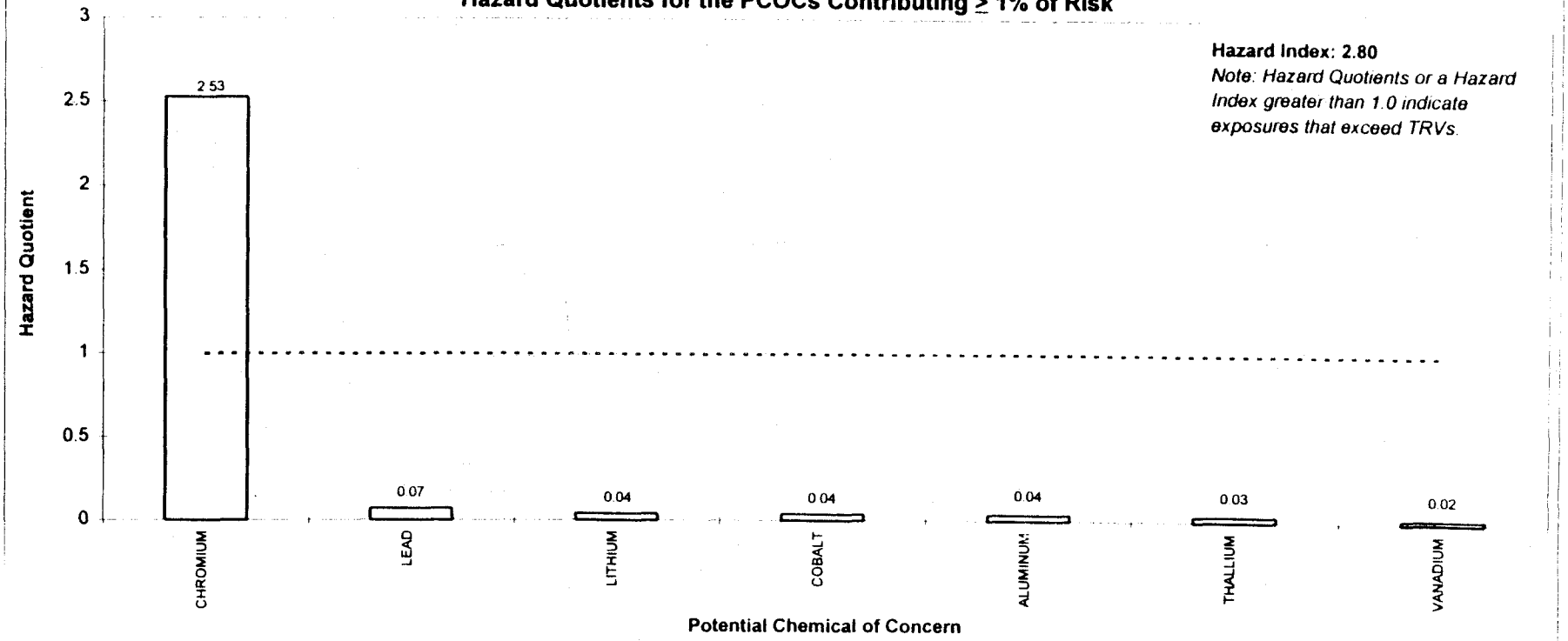
Summary of Ecotoxicological Risk to American Kestrels in the OU11 West Spray Field Source Area at RFETS

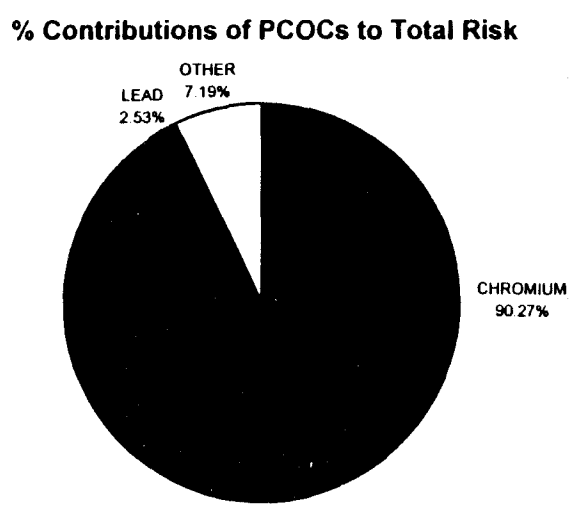


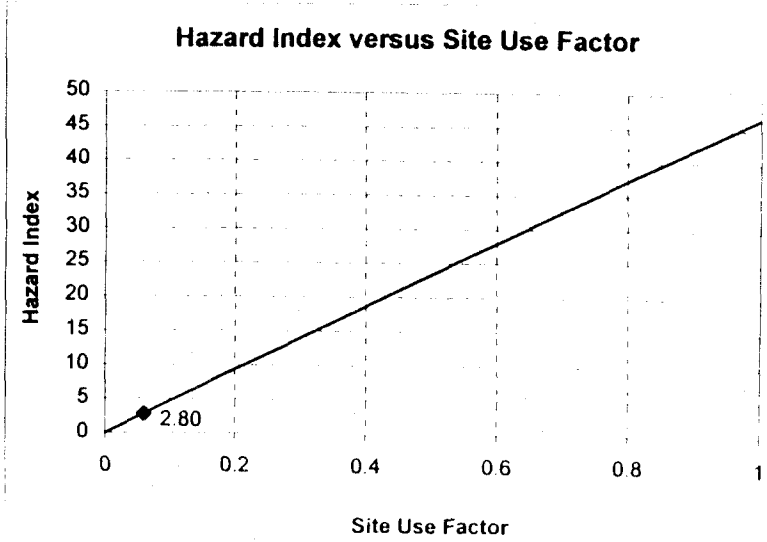
Summary of Ecotoxicological Risk to American Ke...els in the OU2 Mound Area Source Area at RFETS



Summary of Ecotoxicological Risk to American Ke...rels in the OU2 Mound Area Source Area at RFETS

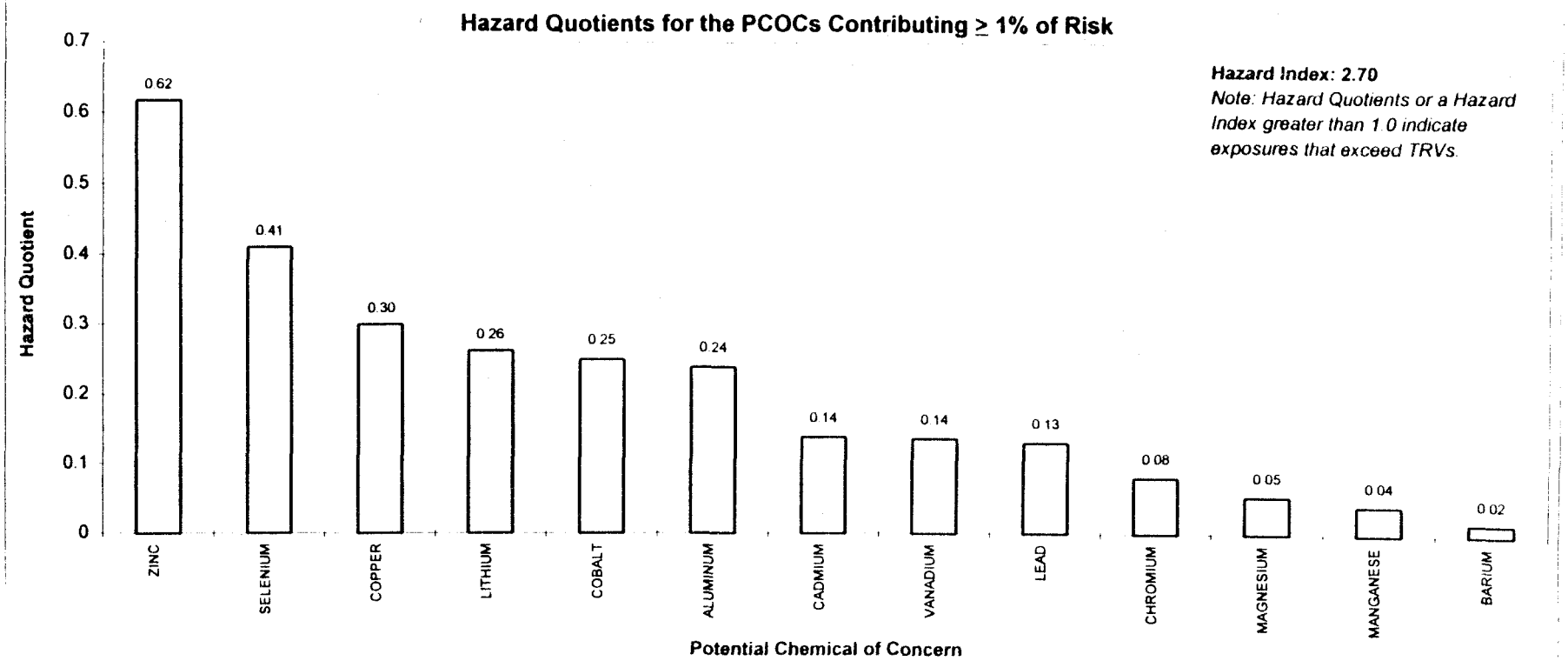




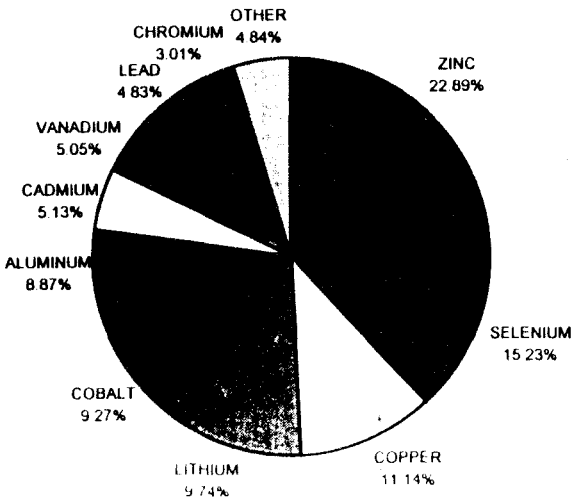


Summary of Ecotoxicological Risk to American Kestrels in the OU5 C-Ponds Source Area at RFETS

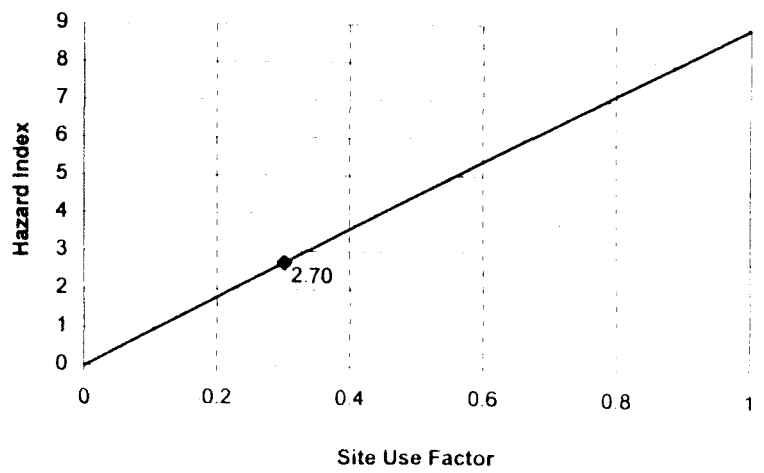
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



% Contributions of PCOCs to Total Risk



Hazard Index versus Site Use Factor



Summary of Ecotoxicological Risk to American Kestrels in the OU2 Mound Area Source Area at RFETS

AMERICAN KESTRELS OU2 MOUND AREA		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte[1]	PCOC for OU2	IR = NR SUF = 0.060		IR = I SUF = I		IR = 0.008 SUF = 0.060					
CHROMIUM	X	NR	—	62.800	5.577	10.200	0.005	5.582	2.207	2.53	90.27%
LEAD	X	3.200	0.265	NR	—	16.000	0.008	0.273	3.850	0.07	2.53%
LITHIUM		NR	—	NR	—	8.800	0.004	0.004	0.099	0.04	1.44%
COBALT		NR	—	NR	—	6.200	0.003	0.003	0.076	0.04	1.41%
ALUMINUM		NR	—	NR	—	10100.000	4.848	4.848	130.867	0.04	1.32%
THALLIUM		NR	—	NR	—	0.500	2.40E-04	2.40E-04	0.007	0.03	1.22%
VANADIUM		NR	—	NR	—	31.100	0.015	0.015	0.616	0.02	0.87%
MAGNESIUM		NR	—	NR	—	2730.000	1.310	1.310	127.452	0.01	0.37%
MANGANESE		NR	—	NR	—	240.000	0.115	0.115	21.089	0.01	0.19%
BARIUM		NR	—	NR	—	108.000	0.052	0.052	21.155	<0.01	0.09%
STRONTIUM		NR	—	NR	—	66.300	0.032	0.032	14.151	<0.01	0.08%
ARSENIC		NR	—	NR	—	5.900	0.003	0.003	1.846	<0.01	0.06%
AROCLOR-1254	X	NR	—	NR	—	0.970	4.66E-04	4.66E-04	0.361	<0.01	0.05%
BENZO(a)PYRENE	X	NR	—	NR	—	0.096	4.61E-05	4.61E-05	0.078	<0.01	0.02%
ZINC		NR	—	NR	—	46.300	0.022	0.022	38.207	<0.01	0.02%
PHENANTHRENE	X	NR	—	NR	—	0.083	3.98E-05	3.98E-05	0.077	<0.01	0.02%
COPPER		NR	—	NR	—	13.100	0.006	0.006	33.680	<0.01	0.01%
AROCLOR-1260	X	NR	—	NR	—	0.660	3.17E-04	3.17E-04	1.838	<0.01	0.01%
FLUORANTHENE	X	NR	—	NR	—	0.200	9.60E-05	9.60E-05	0.776	<0.01	<0.01%
PYRENE	X	NR	—	NR	—	0.180	8.64E-05	8.64E-05	0.776	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	—	0.045	2.16E-05	2.16E-05	0.194	<0.01	<0.01%
BENZO(b)FLUORANTHENE	X	NR	—	NR	—	0.120	5.76E-05	5.76E-05	0.774	<0.01	<0.01%
CHRYSENE	X	NR	—	NR	—	0.100	4.80E-05	4.80E-05	0.776	<0.01	<0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	—	0.086	4.13E-05	4.13E-05	0.776	<0.01	<0.01%
NICKEL		NR	—	NR	—	11.400	0.005	0.005	146.122	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	—	NR	—	0.045	2.16E-05	2.16E-05	0.776	<0.01	<0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	—	0.052	2.50E-05	2.50E-05	1.204	<0.01	<0.01%

[1] Chromium concentration in terrestrial arthropods is estimated from tissue:soil ratios in the East Trenches source area; Lead concentration in small mammals is estimated from small mammal:soil ratios in the East Trenches source area.

HAZARD INDEX 2.80

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
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NO LOG K_{OW} = No octonol-water partition coefficient available. LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
ts for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to American Kestrels in the OU5 C-Ponds Source Area at RFETS

AMERICAN KESTRELS OU5 C-PONDS		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU5	IR = 0.140 SUF = 0.301		IR = 0.150 SUF = 0.301		IR = 0.008 SUF = 0.301					
ZINC	X	331.676	13.977	210.000	9.482	56.700	0.137	23.595	38.207	0.62	22.89%
SELENIUM		7.964	0.336	ND	—	0.510	0.001	0.337	0.820	0.41	15.23%
COPPER	X	21.044	0.887	204.000	9.211	10.200	0.025	10.122	33.680	0.30	11.14%
LITHIUM	X	NR	—	NR	—	10.700	0.026	0.026	0.099	0.26	9.74%
COBALT	X	NR	—	NR	—	7.900	0.019	0.019	0.076	0.25	9.27%
ALUMINUM		NR	—	NR	—	13000.000	31.304	31.304	130.867	0.24	8.87%
CADMIUM		3.375	0.142	6.400	0.289	ND	—	0.431	3.115	0.14	5.13%
VANADIUM		NR	—	NR	—	34.700	0.084	0.084	0.616	0.14	5.05%
LEAD	X	6.573	0.277	3.600	0.163	26.100	0.063	0.502	3.850	0.13	4.83%
CHROMIUM		3.400	0.143	ND	—	14.800	0.036	0.179	2.207	0.08	3.01%
MAGNESIUM		NR	—	NR	—	2860.000	6.887	6.887	127.452	0.05	2.00%
MANGANESE		NR	—	NR	—	360.000	0.867	0.867	21.089	0.04	1.52%
BARIUM	X	NR	—	NR	—	144.000	0.347	0.347	21.155	0.02	0.61%
STRONTIUM	X	NR	—	NR	—	41.700	0.100	0.100	14.151	0.01	0.26%
TIN		NR	—	NR	—	32.700	0.079	0.079	11.455	0.01	0.26%
ARSENIC		NR	—	NR	—	3.500	0.008	0.008	1.846	<0.01	0.16%
PYRENE	X	NR	—	NR	—	0.094	2.26E-04	2.26E-04	0.776	<0.01	0.01%
FLUORANTHENE	X	NR	—	NR	—	0.078	1.88E-04	1.88E-04	0.776	<0.01	0.01%
NICKEL		NR	—	NR	—	13.800	0.033	0.033	146.122	<0.01	0.01%

HAZARD INDEX 2.70

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
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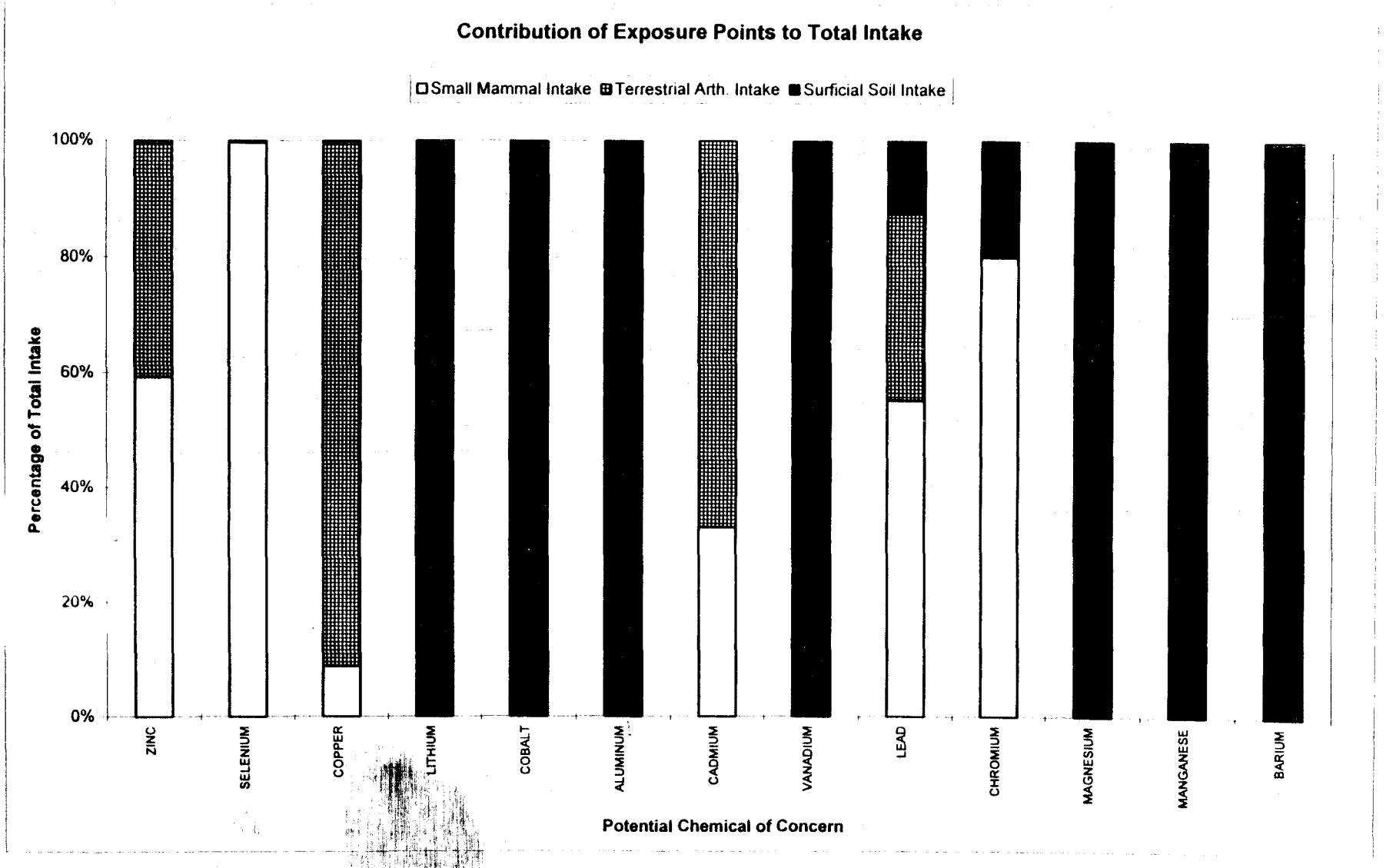
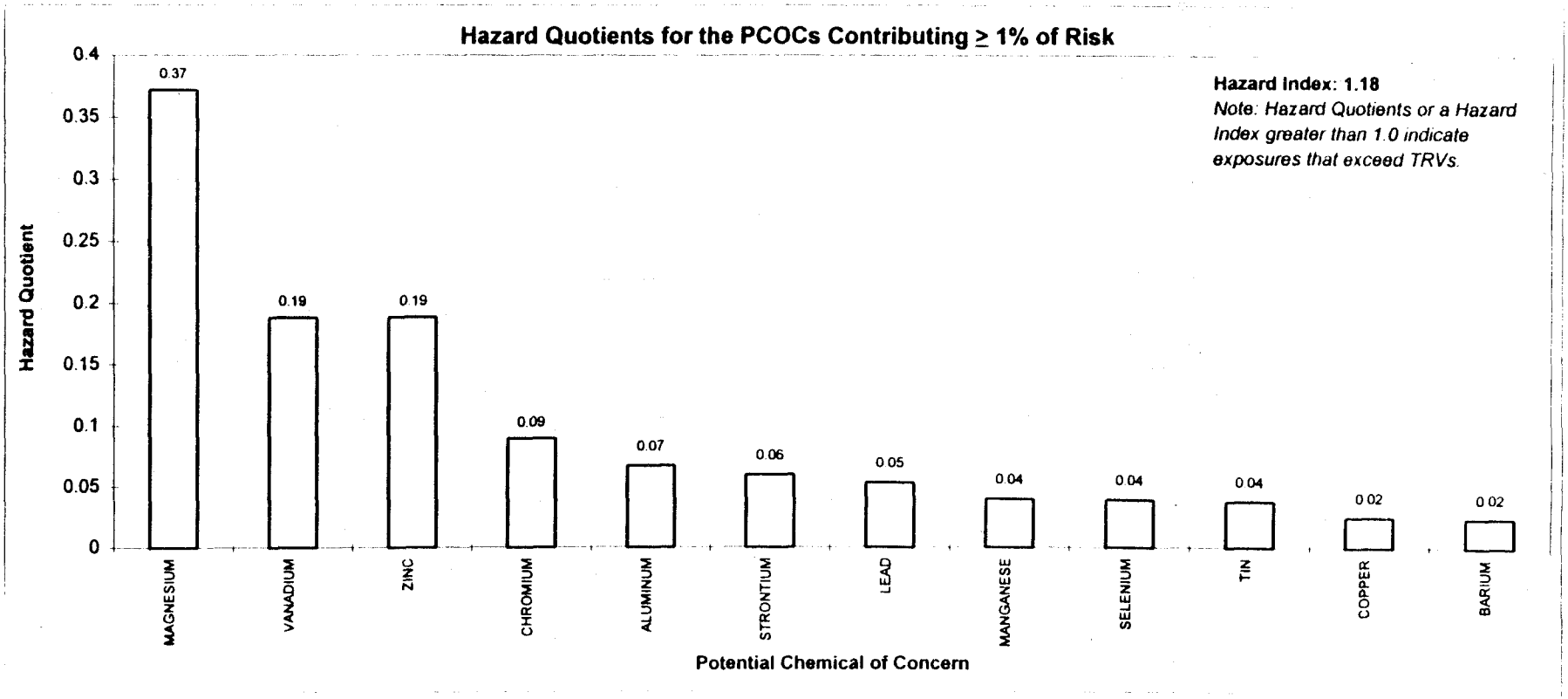
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

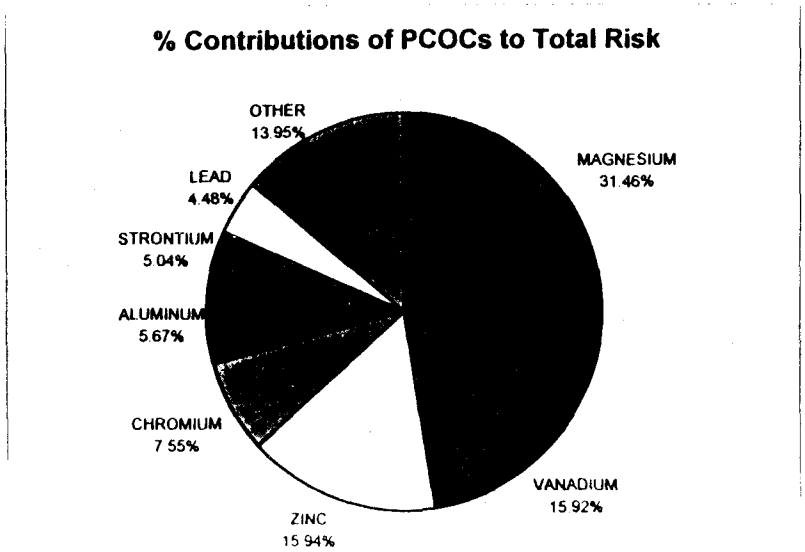
Summary of Ecotoxicological Risk to American Kestrels in the OU5 C-Ponds Source Area at RFETS

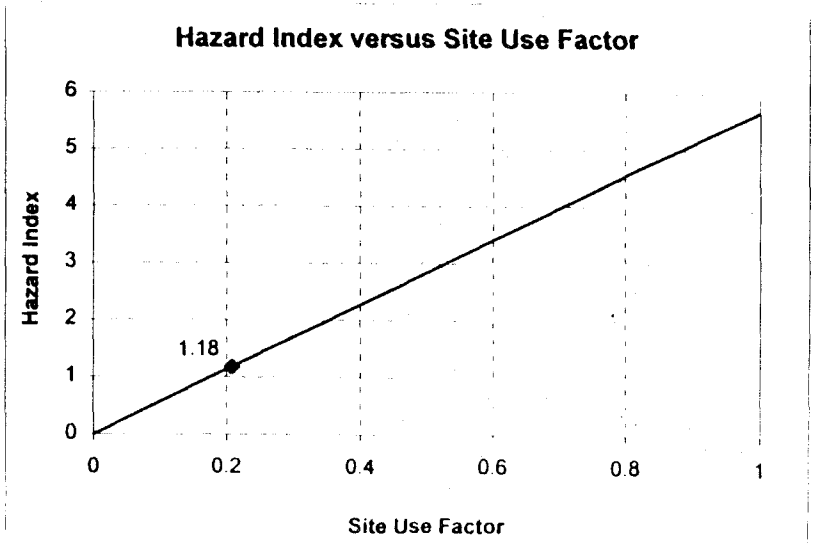


Summary of Ecotoxicological Risk to American Kestrels in the OU6 Burial Trenches Source Area at RFETS

Summary of Ecotoxicological Risk to American Kestrels in the OU6 Burial Trenches Source Area at RFETS







Summary of Ecotoxicological Risk to American Kestrels in the OU6 North Spray Field Source Area at RFETS

AMERICAN KESTRELS OU6 NORTH SPRAY FIELD		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU6	IR = 0.14 SUF = 0.592		IR = 0.15 SUF = 0.592		IR = 0.008 SUF = 0.592					
COBALT	X	NR	—	NR	—	9.750	0.009	0.009	0.076	0.12	23.73%
ALUMINUM		NR	—	NR	—	11820.163	11.253	11.253	130.867	0.09	17.23%
BERYLLIUM		NR	—	NR	—	0.686	0.001	0.001	0.015	0.07	13.36%
LITHIUM		NR	—	NR	—	6.643	0.006	0.006	0.099	0.06	12.14%
VANADIUM	X	NR	—	NR	—	33.599	0.032	0.032	0.616	0.05	10.41%
THALLIUM		NR	—	NR	—	0.340	3.24E-04	3.24E-04	0.007	0.05	9.26%
MAGNESIUM	X	NR	—	NR	—	2397.398	2.282	2.282	127.452	0.02	3.59%
MANGANESE	X	NR	—	NR	—	315.526	0.300	0.300	21.089	0.01	2.85%
LEAD	X	NR	—	NR	—	40.050	0.038	0.038	3.850	0.01	1.98%
BARIUM	X	NR	—	NR	—	170.910	0.163	0.163	21.155	0.01	1.54%
CHROMIUM	X	NR	—	NR	—	13.137	0.013	0.013	2.207	0.01	1.18%
MERCURY	X	NR	—	NR	—	0.066	6.31E-05	6.31E-05	0.014	<0.01	0.90%
ARSENIC	X	NR	—	NR	—	6.579	0.006	0.006	1.846	<0.01	0.65%
STRONTIUM	X	NR	—	NR	—	31.283	0.030	0.030	14.151	<0.01	0.42%
ZINC	X	NR	—	NR	—	48.942	0.047	0.047	38.207	<0.01	0.25%
SELENIUM		NR	—	NR	—	0.574	0.001	0.001	0.820	<0.01	0.24%
NITRATE/NITRITE		NR	—	NR	—	1.000	0.001	0.001	2.007	<0.01	0.10%
COPPER	X	NR	—	NR	—	13.985	0.013	0.013	33.680	<0.01	0.08%
CADMIUM		NR	—	NR	—	0.990	0.001	0.001	3.115	<0.01	0.06%
NICKEL	X	NR	—	NR	—	15.387	0.015	0.015	146.122	<0.01	0.02%

HAZARD INDEX 0.50

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
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NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to American Kestrels in the Burial Trenches Source Area at RFETS

AMERICAN KESTRELS OU6 BURIAL TRENCHES		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU6	IR = 0.290 SUF = 0.028		IR = I SUF = I		IR = NR SUF = 0.208					
MAGNESIUM	X	5840.000	47.421	NR	—	NR	—	47.421	127.452	0.37	31.46%
VANADIUM	X	14.300	0.116	NR	—	NR	—	0.116	0.616	0.19	15.92%
ZINC	X	887.000	7.202	NR	—	NR	—	7.202	38.207	0.19	15.94%
CHROMIUM	X	24.300	0.197	NR	—	NR	—	0.197	2.207	0.09	7.55%
ALUMINUM		1080.000	8.770	NR	—	NR	—	8.770	130.867	0.07	5.67%
STRONTIUM	X	104.000	0.844	NR	—	NR	—	0.844	14.151	0.06	5.04%
LEAD	X	25.100	0.204	NR	—	NR	—	0.204	3.850	0.05	4.48%
MANGANESE	X	103.000	0.836	NR	—	NR	—	0.836	21.089	0.04	3.35%
SELENIUM		3.900	0.032	NR	—	NR	—	0.032	0.820	0.04	3.30%
TIN		52.900	0.430	NR	—	NR	—	0.430	11.455	0.04	3.17%
COPPER	X	103.000	0.836	NR	—	NR	—	0.836	33.680	0.02	2.10%
BARIUM	X	62.500	0.508	NR	—	NR	—	0.508	21.155	0.02	2.03%
SILVER	X	3.000	0.024	NR	—	NR	—	0.024	2304.896	<0.01	<0.01%

HAZARD INDEX 1.18

Notes:

RFETS = Rocky Flats Environmental Technology Site
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Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to American Kestrels in the OU5 Surface Disturbance Source Area at RFETS

AMERICAN KESTRELS OU5 SURFACE DISTURBANCE		EXPOSURE POINT						SUMMARY			
		Small Mammal		Terrestrial Arth.		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Risk
Analyte	PCOC for OU5	IR = NR SUF = 0.044		IR = I SUF = I		IR = 0.008 SUF = 0.044					
COBALT	X	NR	—	NR	—	5.700	0.002	0.002	0.076	0.03	20.96%
ALUMINUM		NR	—	NR	—	7680.000	2.703	2.703	130.867	0.02	16.45%
LITHIUM	X	NR	—	NR	—	6.500	0.002	0.002	0.099	0.02	16.09%
MERCURY	X	NR	—	NR	—	0.660	2.32E-04	2.32E-04	0.014	0.02	13.22%
BERYLLIUM		NR	—	NR	—	0.600	2.11E-04	2.11E-04	0.015	0.01	11.22%
VANADIUM		NR	—	NR	—	22.200	0.008	0.008	0.616	0.01	10.35%
MAGNESIUM		NR	—	NR	—	1810.000	0.637	0.637	127.452	<0.01	3.98%
MANGANESE		NR	—	NR	—	218.000	0.077	0.077	21.089	<0.01	2.91%
CHROMIUM		NR	—	NR	—	7.800	0.003	0.003	2.207	<0.01	1.08%
BARIUM	X	NR	—	NR	—	80.800	0.028	0.028	21.155	<0.01	1.05%
LEAD	X	NR		NR	—	14.100	0.005	0.005	3.850	<0.01	1.03%
STRONTIUM	X	NR	—	NR	—	38.600	0.014	0.014	14.151	<0.01	0.79%
ARSENIC		NR	—	NR	—	3.900	0.001	0.001	1.846	<0.01	0.43%
ZINC	X	NR	—	NR	—	40.000	0.014	0.014	38.207	<0.01	0.29%
COPPER	X	NR	—	NR	—	14.200	0.005	0.005	33.680	<0.01	0.12%
NICKEL		NR	—	NR	—	10.100	0.004	0.004	146.122	<0.01	0.02%

HAZARD INDEX 0.13

Notes:

RFETS = Rocky Flats Environmental Technology Site
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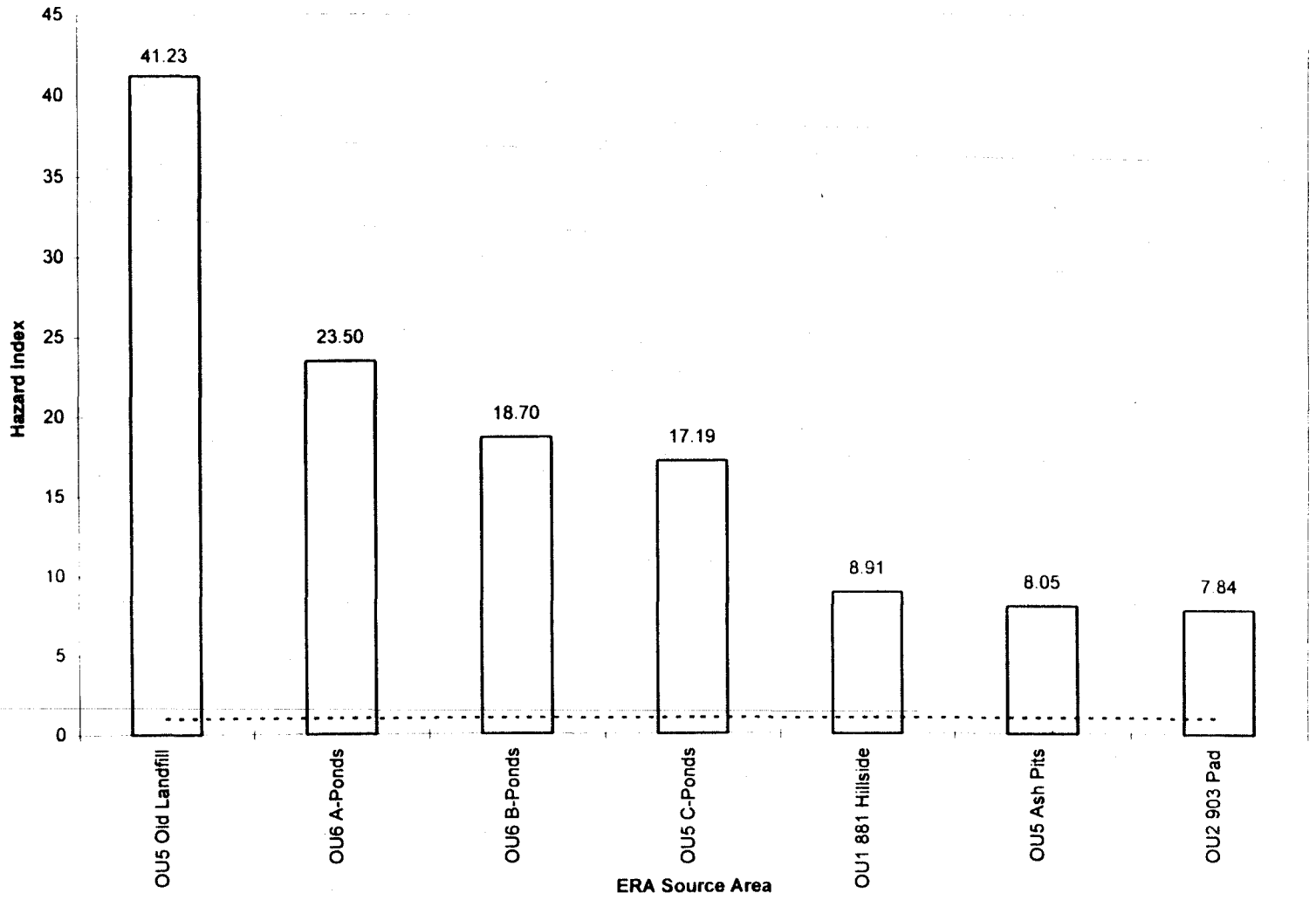
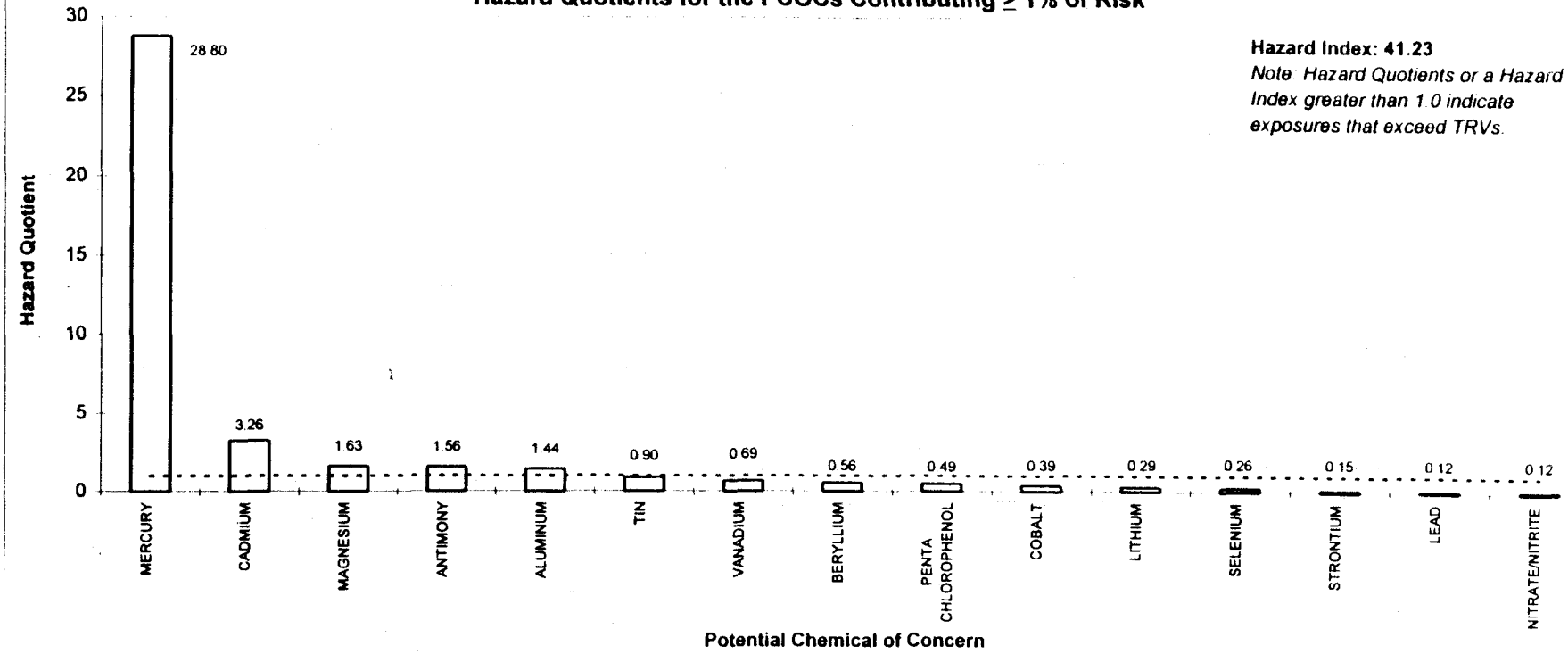
Summary of Ecotoxicological Risk to Great Blue Herons

Summary of Ecotoxicological Risk to Great Blue Herons at RFETS

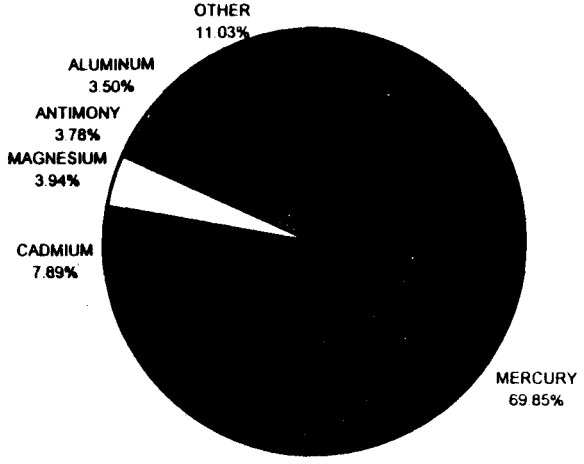


Summary of Ecotoxicological Risk to Great Blue H...ons in the OU5 Old Landfill Source Area at RFETS

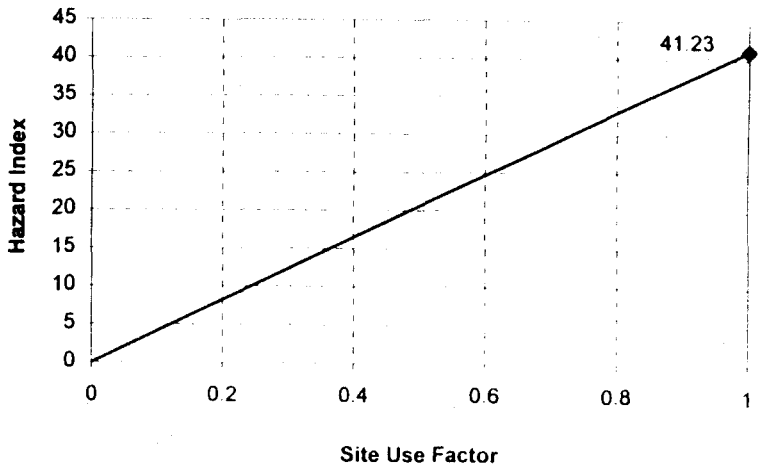
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



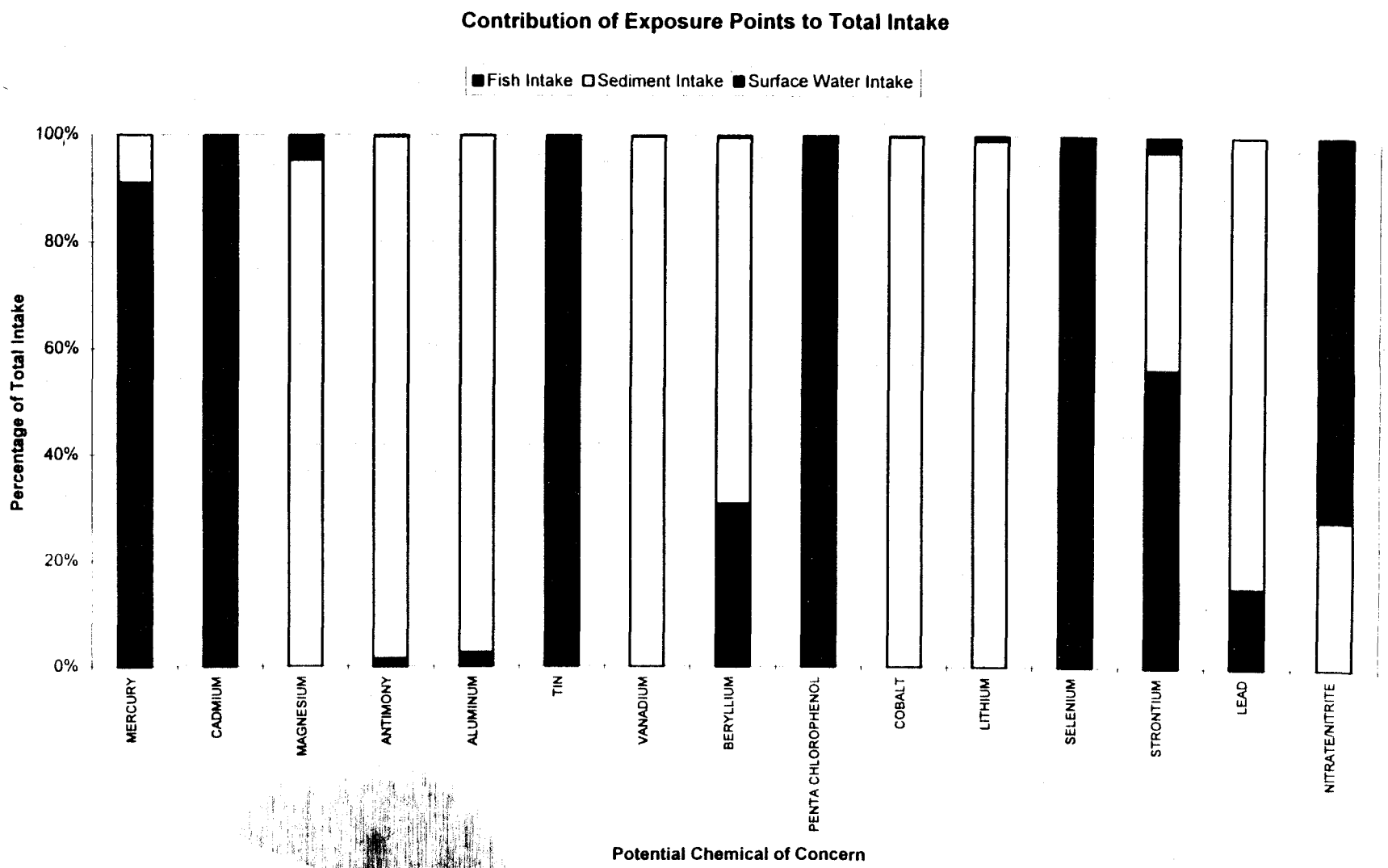
% Contributions of PCOCs to Total Risk



Hazard Index versus Site Use Factor



Summary of Ecotoxicological Risk to Great Blue . .ons in the OU5 Old Landfill Source Area at RFETS



Summary of Ecotoxicological Risk to Great Blue Herons at the OU5 Old Landfill Source at RFETS

GREAT BLUE HERONS OU5 OLD LANDFILL		EXPOSURE POINT							SUMMARY			
		Fish			Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU5	IR = 0.180 SUF = 1			IR = 0.004 SUF = 1		IR = 0.045 SUF = 1					
MERCURY	X	NR	0.731	0.132	3.194	0.013	1.11E-04	5.00E-06	0.144	0.005	28.80	69.85%
CADMIUM		NR	20.993	3.779	2.486	0.010	0.002	7.20E-05	3.789	1.164	3.26	7.89%
MAGNESIUM		NR	NO BCF	—	4628.783	18.515	19.837	0.893	19.408	11.932	1.63	3.94%
ANTIMONY	X	NR	0.018	0.003	51.300	0.205	0.015	0.001	0.209	0.134	1.56	3.78%
ALUMINUM		NR	9.830	1.769	16076.395	64.306	1.471	0.066	66.141	45.851	1.44	3.50%
TIN		NR	77.147	13.886	ND	ND	0.021	0.001	13.887	15.433	0.90	2.18%
VANADIUM		NR	NO BCF	—	39.300	0.157	0.008	3.68E-04	0.158	0.230	0.69	1.67%
BERYLLIUM		NR	0.017	0.003	1.700	0.007	0.001	4.27E-05	0.010	0.018	0.56	1.35%
PENTA CHLOROPHENOL	X	NR	18.905	3.403	ND	—	0.005	2.25E-04	3.403	6.888	0.49	1.20%
COBALT	X	NR	NO BCF	—	10.900	0.044	0.002	9.00E-05	0.044	0.112	0.39	0.95%
LITHIUM	X	NR	NO BCF	—	15.400	0.062	0.013	0.001	0.062	0.213	0.29	0.71%
SELENIUM		NR	0.449	0.081	ND	—	0.003	1.14E-04	0.081	0.306	0.26	0.64%
STRONTIUM	X	NR	2.431	0.438	79.000	0.316	0.484	0.022	0.775	5.288	0.15	0.36%
LEAD	X	NR	0.151	0.027	37.926	0.152	0.004	1.81E-04	0.179	1.439	0.12	0.30%
NITRATE/NITRITE		NR	NO BCF	—	6.526	0.026	1.490	0.067	0.093	0.750	0.12	0.30%
MANGANESE		NR	NO BCF	—	556.331	2.225	0.061	0.003	2.228	23.173	0.10	0.23%
BARIUM	X	NR	NO BCF	—	186.000	0.744	0.162	0.007	0.751	7.906	0.09	0.23%
BIS(2-ETHYLHEXYL) PHTHALATE	X	NR	0.156	0.028	0.068	2.72E-04	0.002	9.00E-05	0.028	0.450	0.06	0.15%
CHROMIUM		NR	0.011	0.002	22.917	0.092	0.004	1.92E-04	0.094	1.551	0.06	0.15%
COPPER	X	NR	1.717	0.309	108.217	0.433	0.006	2.55E-04	0.742	12.587	0.06	0.14%
THALLIUM		NR	ND	—	0.600	0.002	0.002	8.92E-05	0.002	0.046	0.04	0.11%
ARSENIC		NR	0.039	0.007	6.100	0.024	0.002	9.63E-05	0.031	0.690	0.04	0.11%
ZINC	X	NR	13.717	2.469	634.180	2.537	0.022	0.001	5.007	138.711	0.04	0.09%
TRICHLOROETHENE		NR	0.117	0.021	ND	—	0.003	1.29E-04	0.021	0.993	0.02	0.05%
MOLYBDENUM		NR	NO BCF	—	3.900	0.016	0.004	1.98E-04	0.016	0.933	0.02	0.04%
PHENANTHRENE	X	NR	ND	—	0.082	3.28E-04	ND	—	3.28E-04	0.029	0.01	0.03%
AROCLOR-1254	X	NR	ND	—	0.250	0.001	ND	—	0.001	0.135	0.01	0.02%
METHYLENE CHLORIDE	X	NR	0.016	0.003	ND	—	0.003	1.38E-04	0.003	0.642	<0.01	0.01%
NICKEL		NR	0.904	0.163	21.300	0.085	0.009	4.24E-04	0.248	54.608	<0.01	0.01%
FLUORANTHENE	X	NR	ND	—	0.097	3.88E-04	ND	—	3.88E-04	0.290	<0.01	<0.01%
PYRENE	X	NR	ND	—	0.097	3.88E-04	ND	—	3.88E-04	0.290	<0.01	<0.01%
CHRYSENE	X	NR	ND	—	0.041	1.64E-04	ND	—	1.64E-04	0.290	<0.01	<0.01%
BENZO(a)ANTHRACENE	X	NR	ND	—	0.038	1.52E-04	ND	—	1.52E-04	0.290	<0.01	<0.01%
ACETONE		NR	0.009	0.002	0.046	1.84E-04	0.022	0.001	0.003	68.362	<0.01	<0.01%
SILVER	X	NR	0.003	0.001	6.597	0.026	0.003	1.57E-04	0.027	861.381	<0.01	<0.01%
TETRACHLOROETHENE		NR	ND	—	0.001	4.00E-06	ND	—	4.00E-06	1.253	<0.01	<0.01%

HAZARD INDEX 41.23

Notes:

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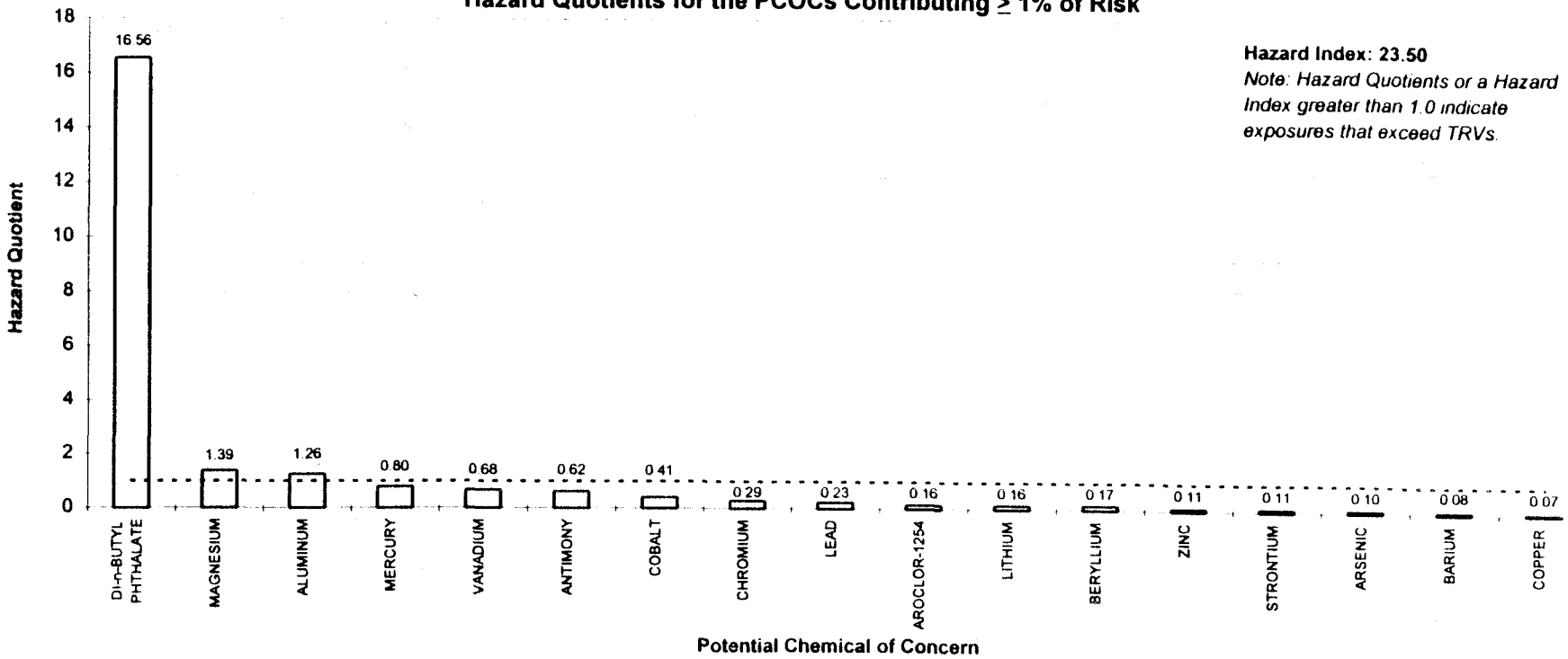
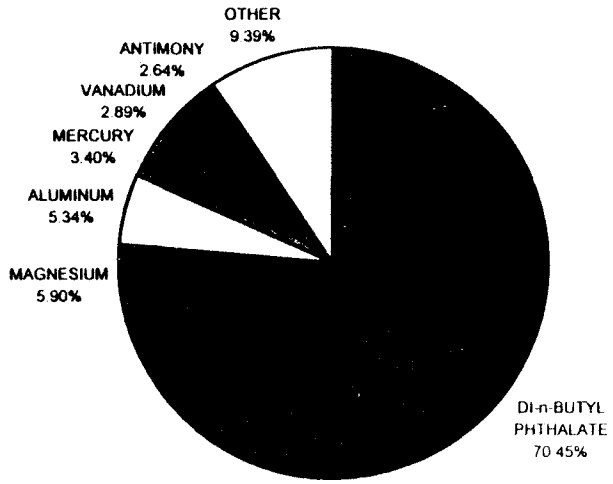
Summary of Ecotoxicological Risk to Great Blue Herons in the OU6 A-Ponds Source Area at RFETS

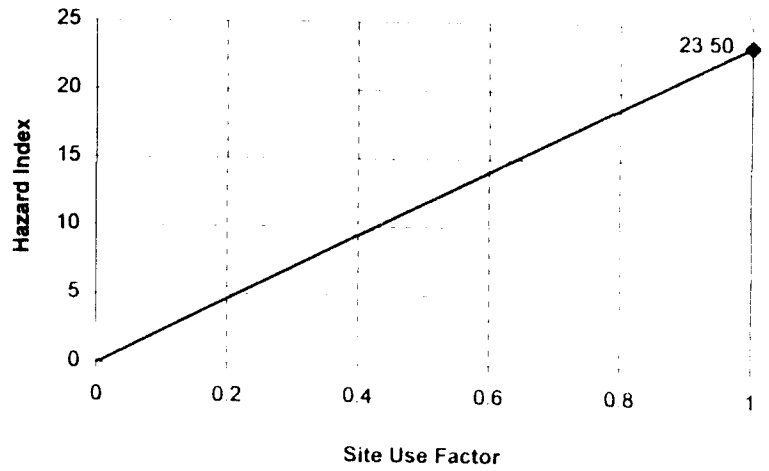
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



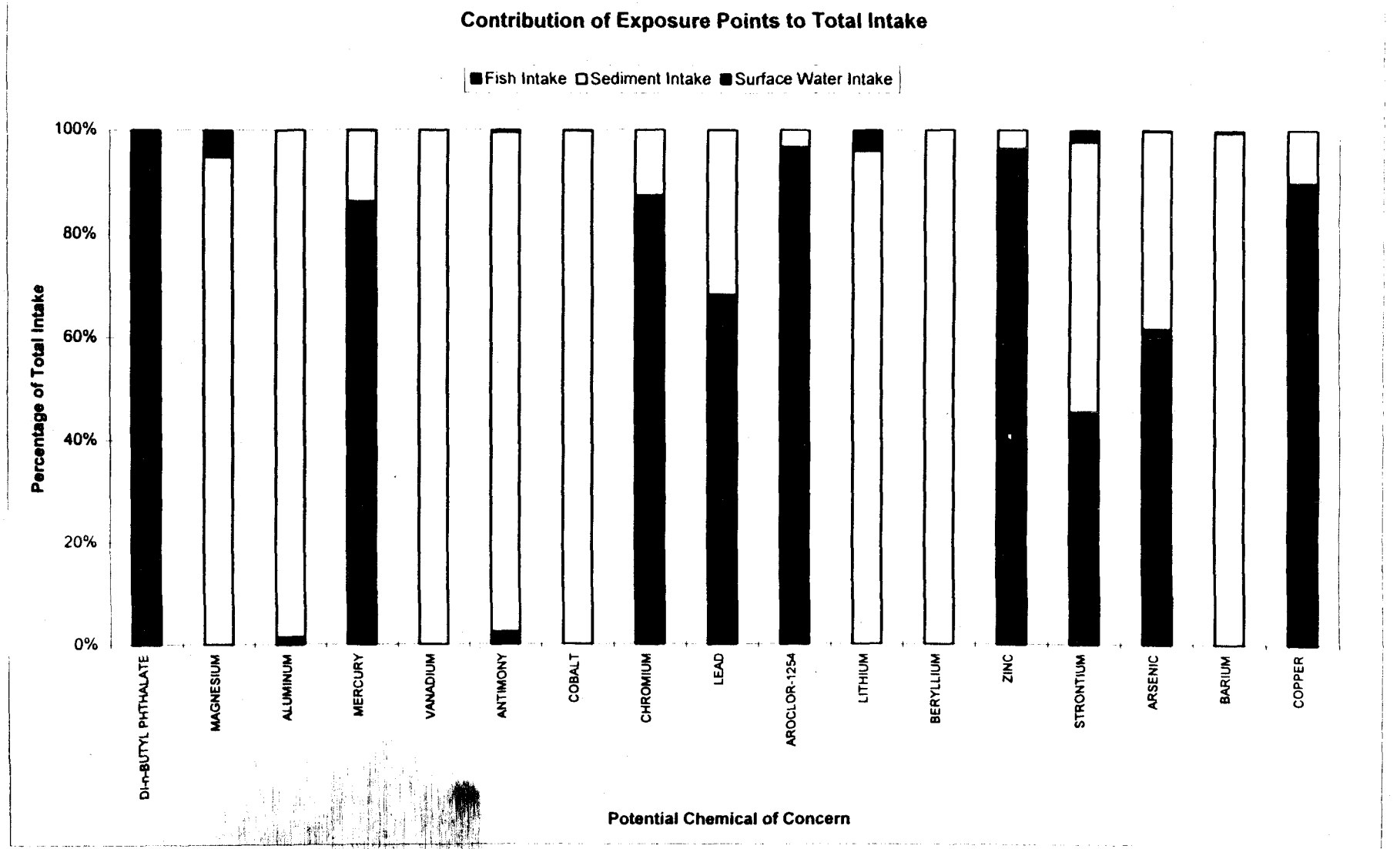
% Contributions of PCOCs to Total Risk



Hazard Index versus Site Use Factor



Summary of Ecotoxicological Risk to Great Blue Herons in the OU6 A-Ponds Source Area at RFETS



Summary of Ecotoxicological Risk to Great Blue Herons in the OU6 A-Ponds Source Area at RFETS

GREAT BLUE HERONS OU6 A-PONDS		EXPOSURE POINT							SUMMARY			
		Fish			Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU6	IR = 0.180 SUF = 1			IR = 0.004 SUF = 1		IR = 0.045 SUF = 1					
DI-n-BUTYL PHTHALATE	X	NR	4.136	0.744	ND	—	0.002	9.00E-05	0.745	0.045	16.56	70.45%
MAGNESIUM	X	NR	NO BCF	—	3921.004	15.684	18.851	0.848	16.532	11.932	1.39	5.90%
ALUMINUM		NR	4.700	0.846	14176.386	56.706	0.405	0.018	57.570	45.851	1.26	5.34%
MERCURY	X	0.020		0.004	0.142	0.001	1.49E-04	6.71E-06	0.004	0.005	0.80	3.40%
VANADIUM	X	NR	NO BCF	—	38.875	0.155	0.002	1.03E-04	0.156	0.230	0.68	2.89%
ANTIMONY	X	NR	0.011	0.002	20.227	0.081	0.009	3.98E-04	0.083	0.134	0.62	2.64%
COBALT	X	NR	NO BCF	—	11.590	0.046	0.001	6.57E-05	0.046	0.112	0.41	1.75%
CHROMIUM	X	2.161		0.389	13.994	0.056	0.002	7.34E-05	0.445	1.551	0.29	1.22%
LEAD	X	1.270		0.229	26.601	0.106	0.003	1.49E-04	0.335	1.439	0.23	0.99%
AROCLOR-1254	X	0.120		0.022	0.182	0.001	NR	—	0.022	0.135	0.16	0.69%
LITHIUM		NR	NO BCF	—	8.270	0.033	0.031	0.001	0.034	0.213	0.16	0.68%
BERYLLIUM		ND		—	0.710	0.003	ND	—	0.003	0.018	0.17	0.71%
ZINC	X	80.045		14.408	130.564	0.522	0.008	3.70E-04	14.931	138.711	0.11	0.46%
STRONTIUM	X	NR	1.414	0.254	73.117	0.292	0.278	0.013	0.559	5.288	0.11	0.45%
ARSENIC	X	0.229		0.041	6.354	0.025	0.004	1.60E-04	0.067	0.690	0.10	0.41%
BARIUM	X	NR	NO BCF	—	163.378	0.654	0.062	0.003	0.656	7.906	0.08	0.35%
COPPER	X	4.357		0.784	22.165	0.089	0.002	9.44E-05	0.873	12.587	0.07	0.30%
MANGANESE	X	NR	NO BCF	—	362.368	1.449	0.179	0.008	1.458	23.173	0.06	0.27%
THALLIUM		NR	ND	—	0.690	0.003	ND	—	0.003	0.046	0.07	0.28%
PHENANTHRENE	X	NR	ND	—	0.311	0.001	ND	—	0.001	0.029	0.03	0.15%
BENZO(a)PYRENE	X	NR	ND	—	0.282	0.001	ND	—	0.001	0.029	0.03	0.15%
BENZO(k)FLUORANTHENE	X	NR	ND	—	0.200	0.001	ND	—	0.001	0.029	0.03	0.15%
ANTHRACENE	X	NR	ND	—	0.088	3.52E-04	ND	—	3.52E-04	0.023	0.02	0.07%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	ND	—	1.241	0.005	ND	—	0.005	0.450	0.01	0.05%
INDENO(1,2,3-cd)PYRENE	X	NR	ND	—	0.200	0.001	ND	—	0.001	0.073	0.01	0.06%
NICKEL	X	2.529		0.455	17.820	0.071	0.003	1.25E-04	0.527	54.608	0.01	0.04%
SELENIUM		ND		—	0.640	0.003	0.003	1.48E-04	0.003	0.306	0.01	0.04%
FLUORANTHENE	X	NR	ND	—	0.405	0.002	ND	—	0.002	0.290	0.01	0.03%
PYRENE	X	NR	ND	—	0.343	0.001	ND	—	0.001	0.290	<0.01	0.01%
BENZO(b)FLUORANTHENE	X	NR	ND	—	0.312	0.001	ND	—	0.001	0.289	<0.01	0.01%
BENZO(a)ANTHRACENE	X	NR	ND	—	0.270	0.001	ND	—	0.001	0.290	<0.01	0.01%
CHRYSENE	X	NR	ND	—	0.268	0.001	ND	—	0.001	0.290	<0.01	0.01%
CADMIUM		ND		—	0.945	0.004	0.001	4.33E-05	0.004	1.164	<0.01	0.01%
METHYLENE CHLORIDE	X	NR	0.011	0.002	ND	—	0.002	9.00E-05	0.002	0.642	<0.01	0.01%
BENZO(ghi)PERYLENE	X	NR	ND	—	0.210	0.001	ND	—	0.001	0.290	<0.01	0.01%
ALDRIN	X	ND		—	0.009	3.68E-05	NR	—	3.68E-05	0.046	<0.01	<0.01%
TOLUENE	X	NR	ND	—	0.178	0.001	ND	—	0.001	3.476	<0.01	<0.01%
SILVER	X	0.790		0.142	ND	—	0.002	8.38E-05	0.142	861.381	<0.01	<0.01%
MOLYBDENUM	X	NR	NO BCF	—	ND	—	0.003	1.38E-04	1.38E-04	0.933	<0.01	<0.01%

Summary of Ecotoxicological Risk to Great Blue ..erons in the OU6 A-Ponds Source Area at RFETS

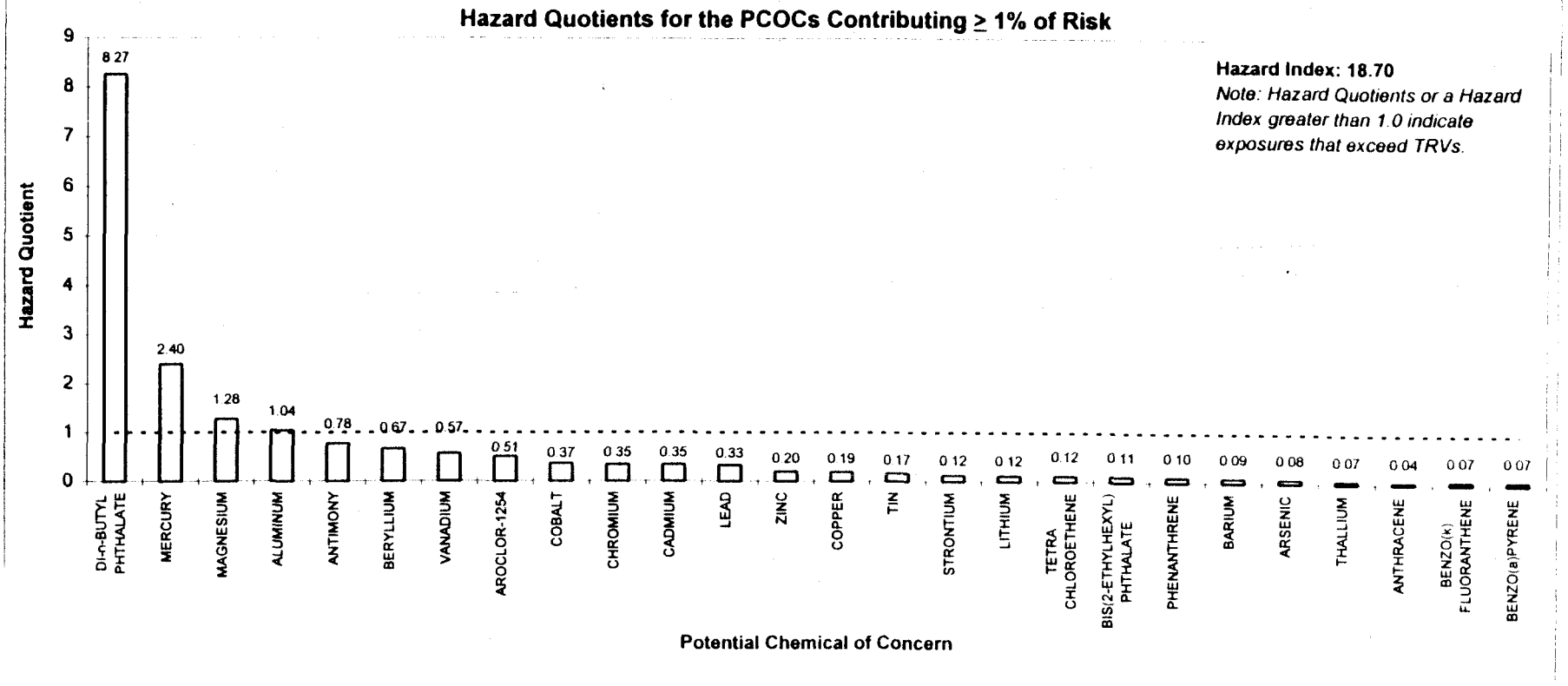
GREAT BLUE HERONS OU6 A-PONDS		EXPOSURE POINT							SUMMARY			
		Fish			Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU6	IR = 0.180 SUF = 1			IR = 0.004 SUF = 1		IR = 0.045 SUF = 1					
PHENOL	X	NR	ND	—	0.110	4.40E-04	ND	—	4.40E-04	15.501	<0.01	<0.01%
DI-n-OCTYL PHTHALATE	X	NR	ND	—	0.130	0.001	ND	—	0.001	37.020	<0.01	<0.01%
ACETONE	X	NR	ND	—	0.230	0.001	ND	—	0.001	68.362	<0.01	<0.01%
ACENAPHTHENE	X	NR	ND	—	0.089	3.56E-04	ND	—	3.56E-04	29.010	<0.01	<0.01%
BENZENE	X	NR	ND	—	0.003	1.20E-05	ND	—	1.20E-05	6.649	<0.01	<0.01%

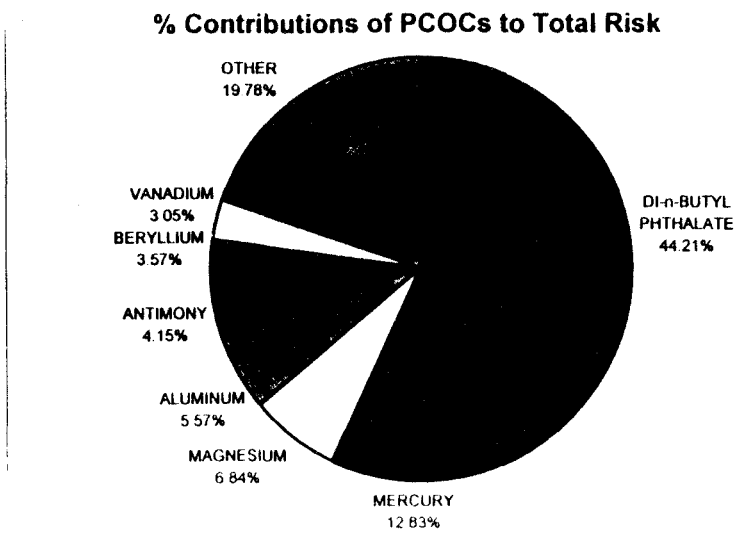
HAZARD INDEX 23.50

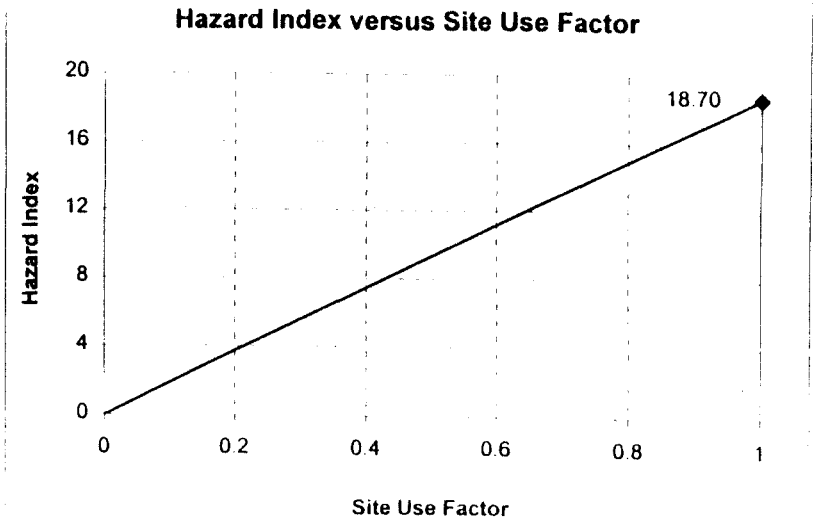
Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

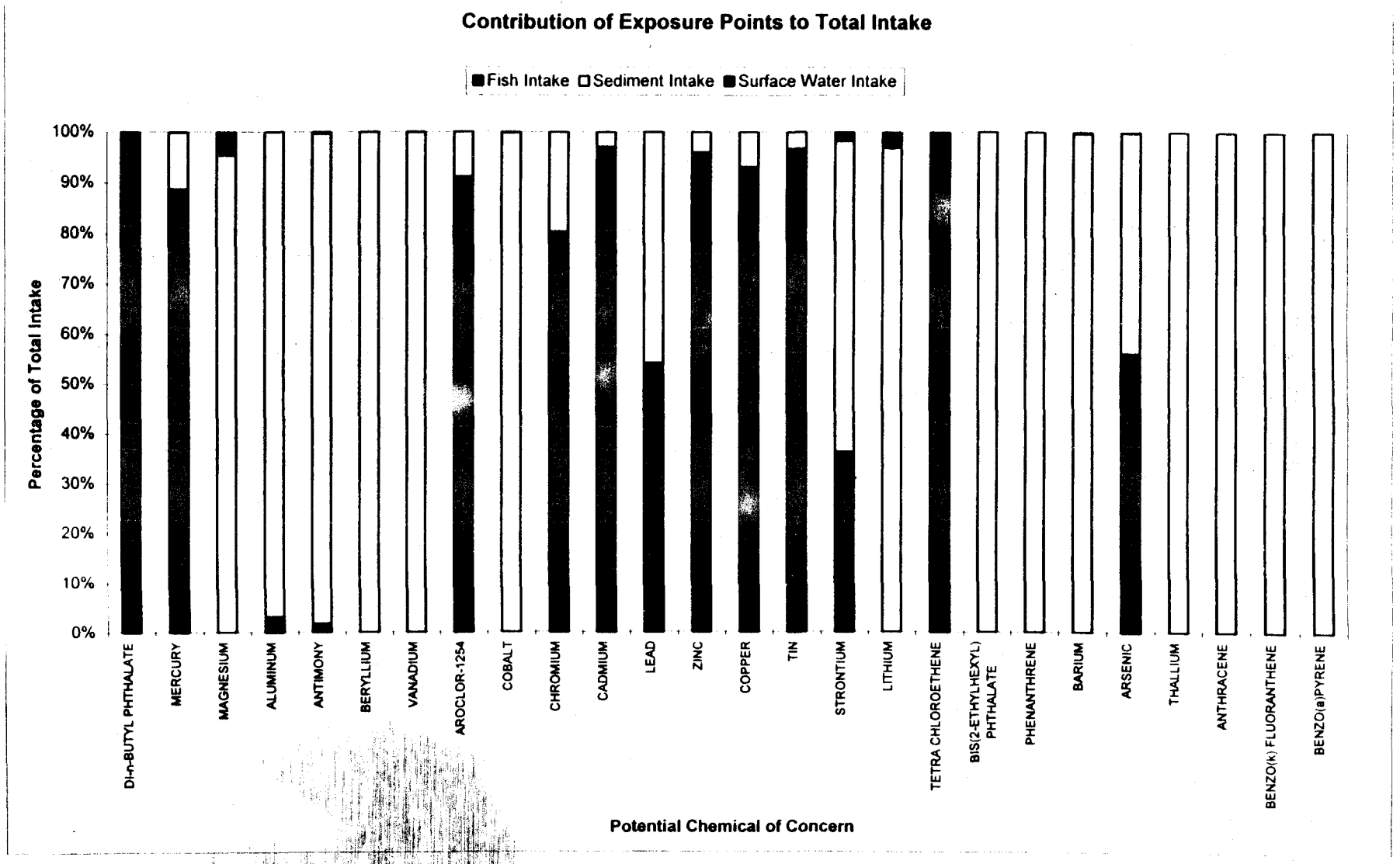
Summary of Ecotoxicological Risk to Great Blue Herons in the OU6 B-Ponds Source Area at RFETS







Summary of Ecotoxicological Risk to Great Blue Herons in the OU6 B-Ponds Source Area at RFETS



Summary of Ecotoxicological Risk to Great Blue Herons in the OU6 B-Ponds Source Area at RFETS

GREAT BLUE HERONS OU6 B-PONDS		EXPOSURE POINT							SUMMARY			
		Fish			Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU6	IR = 0.180 SUF = 1			IR = 0.004 SUF = 1		IR = 0.045 SUF = 1					
DI-n-BUTYL PHTHALATE	X	NR	2.068	0.372	ND	—	0.001	4.50E-05	0.372	0.045	8.27	44.21%
MERCURY	X	0.060		0.011	0.340	0.001	2.75E-04	1.24E-05	0.012	0.005	2.40	12.83%
MAGNESIUM	X	NR	NO BCF	—	3643.654	14.575	15.504	0.698	15.272	11.932	1.28	6.84%
ALUMINUM		NR	8.604	1.549	11556.246	46.225	0.264	0.012	47.786	45.851	1.04	5.57%
ANTIMONY	X	NR	0.010	0.002	25.419	0.102	0.009	3.83E-04	0.104	0.134	0.78	4.15%
BERYLLIUM		ND		—	2.933	0.012	1.79E-04	8.06E-06	0.012	0.018	0.67	3.57%
VANADIUM	X	NR	NO BCF	—	32.781	0.131	0.003	1.28E-04	0.131	0.230	0.57	3.05%
AROCLOR-1254	X	0.351		0.063	1.543	0.006	NR	—	0.069	0.135	0.51	2.73%
COBALT	X	NR	NO BCF	—	10.133	0.041	0.002	7.12E-05	0.041	0.112	0.37	1.96%
CHROMIUM	X	2.400		0.432	26.369	0.105	0.002	9.95E-05	0.538	1.551	0.35	1.85%
CADMIUM		2.176		0.392	2.888	0.012	0.001	4.44E-05	0.403	1.164	0.35	1.85%
LEAD	X	1.426		0.257	54.428	0.218	0.005	2.31E-04	0.475	1.439	0.33	1.77%
ZINC	X	148.423		26.716	279.259	1.117	0.026	0.001	27.834	138.711	0.20	1.07%
COPPER	X	12.594		2.267	42.045	0.168	ND	—	2.435	12.587	0.19	1.03%
TIN		NR	13.941	2.509	21.229	0.085	0.006	2.85E-04	2.595	15.433	0.17	0.90%
STRONTIUM	X	NR	1.315	0.237	101.256	0.405	0.255	0.011	0.653	5.288	0.12	0.66%
LITHIUM		NR	NO BCF	—	6.200	0.025	0.017	0.001	0.026	0.213	0.12	0.65%
TETRA CHLOROETHENE	X	NR	0.826	0.149	ND	—	0.004	1.65E-04	0.149	1.253	0.12	0.64%
BIS(2 ETHYLHEXYL) PHTHALATE	X	NR	ND	—	12.825	0.051	ND	—	0.051	0.450	0.11	0.61%
PHENANTHRENE	X	NR	ND	—	0.744	0.003	ND	—	0.003	0.029	0.10	0.55%
BARIUM	X	NR	NO BCF	—	178.739	0.715	0.051	0.002	0.717	7.906	0.09	0.48%
ARSENIC	X	0.179		0.032	6.286	0.025	0.002	1.01E-04	0.057	0.690	0.08	0.44%
THALLIUM		NR	ND	—	0.790	0.003	ND	—	0.003	0.046	0.07	0.35%
ANTHRACENE	X	NR	ND	—	0.326	0.001	ND	—	0.001	0.023	0.04	0.23%
BENZO(k) FLUORANTHENE	X	NR	ND	—	0.411	0.002	ND	—	0.002	0.029	0.07	0.37%
BENZO(a)PYRENE	X	NR	ND	—	0.398	0.002	ND	—	0.002	0.029	0.07	0.37%
MANGANESE	X	NR	NO BCF	—	272.520	1.090	0.098	0.004	1.094	23.173	0.05	0.25%
AROCLOR-1260	X	0.142		0.026	0.166	0.001	NR	—	0.026	0.687	0.04	0.20%
TRICHLOROETHENE	X	NR	0.117	0.021	ND	—	0.003	1.29E-04	0.021	0.993	0.02	0.11%
DIBENZO(a,h)ANTHRACENE	X	NR	ND	—	0.150	0.001	ND	—	0.001	0.029	0.03	0.18%
INDENO(1,2,3-cd)PYRENE	X	NR	ND	—	0.350	0.001	ND	—	0.001	0.073	0.01	0.07%
FLUORANTHENE	X	NR	ND	—	1.128	0.005	ND	—	0.005	0.290	0.02	0.09%
PYRENE	X	NR	ND	—	0.951	0.004	ND	—	0.004	0.290	0.01	0.07%
BENZO(b)FLUORANTHENE	X	NR	ND	—	0.854	0.003	ND	—	0.003	0.289	0.01	0.06%
CHRYSENE	X	NR	ND	—	0.614	0.002	ND	—	0.002	0.290	0.01	0.04%
SELENIUM		ND		—	0.591	0.002	0.002	9.10E-05	0.002	0.306	0.01	0.03%
BENZO(a)ANTHRACENE	X	NR	ND	—	0.429	0.002	ND	—	0.002	0.290	0.01	0.04%
AROCLOR-1248		ND		—	0.165	0.001	NR	—	0.001	0.135	0.01	0.04%
FLUORENE	X	NR	ND	—	0.351	0.001	ND	—	0.001	0.289	<0.01	0.02%

Summary of Ecotoxicological Risk to Great Blue Herons in the OU6 B-Ponds Source Area at RFETS

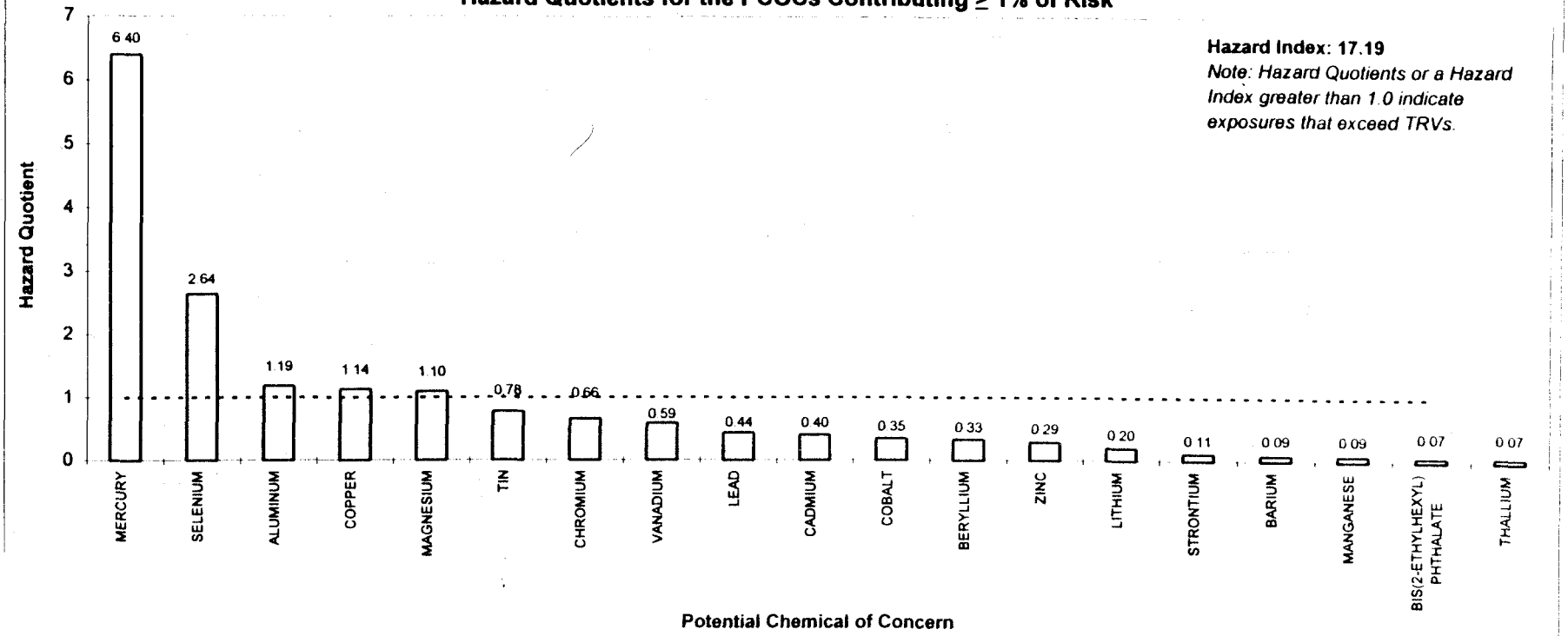
GREAT BLUE HERONS OU6 B-PONDS		EXPOSURE POINT							SUMMARY			
		Fish			Sediment		Surface Water					
Analyte	PCOC for OU6	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
		IR = 0.180 SUF = 1			IR = 0.004 SUF = 1		IR = 0.045 SUF = 1					
BENZO(ghi)PERYLENE	X	NR	ND	—	0.270	0.001	ND	—	0.001	0.290	<0.01	0.02%
NICKEL	X	ND		—	19.763	0.079	0.004	1.60E-04	0.079	54.608	<0.01	0.01%
HEPTACHLOR	X	ND		—	0.007	2.71E-05	NR	—	2.71E-05	0.025	<0.01	0.01%
SILVER	X	0.480		0.086	92.067	0.368	ND	—	0.455	861.381	<0.01	<0.01%
MOLYBDENUM	X	NR	NO BCF	—	ND	—	0.007	3.31E-04	3.31E-04	0.933	<0.01	<0.01%
TOLUENE	X	NR	ND	—	0.278	0.001	ND	—	0.001	3.476	<0.01	<0.01%
1,2-DICHLOROETHANE	X	NR	0.008	0.001	ND	—	0.001	4.50E-05	0.001	15.067	<0.01	<0.01%
PHENOL	X	NR	ND	—	0.290	0.001	ND	—	0.001	15.501	<0.01	<0.01%
METHYLENE CHLORIDE	X	NR	ND	—	0.009	3.60E-05	ND	—	3.60E-05	0.642	<0.01	<0.01%
NAPHTHALENE	X	NR	ND	—	0.351	0.001	ND	—	0.001	29.010	<0.01	<0.01%
ACENAPHTHENE	X	NR	ND	—	0.341	0.001	ND	—	0.001	29.010	<0.01	<0.01%
ACETONE	X	NR	0.004	0.001	0.190	0.001	0.011	4.76E-04	0.002	68.362	<0.01	<0.01%
DI-n-OCTYL PHTHALATE	X	NR	ND	—	0.250	0.001	ND	—	0.001	37.020	<0.01	<0.01%
2-METHYLNAPHTHALENE	X	NR	ND	—	0.170	0.001	ND	—	0.001	29.010	<0.01	<0.01%
gamma-BHC (LINDANE)	X	ND		—	0.006	2.31E-05	NR	—	2.31E-05	1.500	<0.01	<0.01%
BUTYL BENZYL PHTHALATE	X	NR	ND	—	0.110	4.40E-04	ND	—	4.40E-04	84.619	<0.01	<0.01%

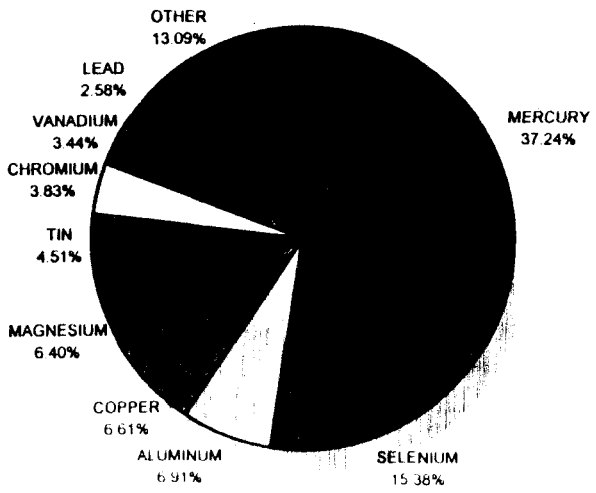
HAZARD INDEX 18.70

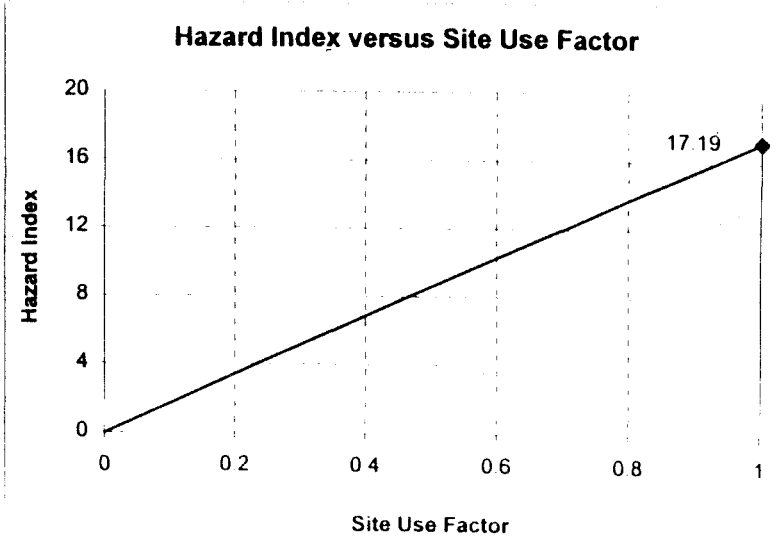
Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp Point Conc = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

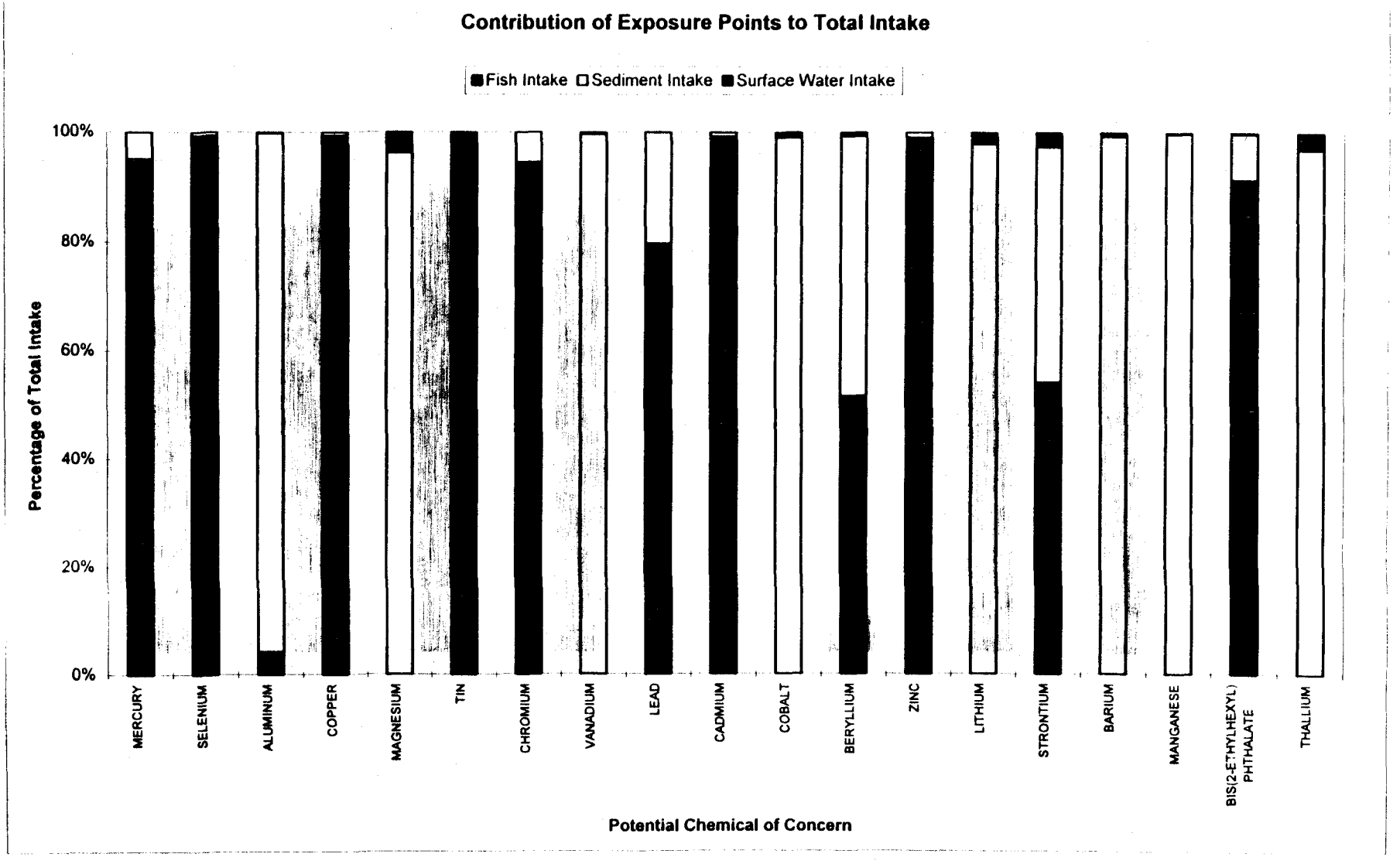
Summary of Ecotoxicological Risk to Great Blue Herons in the OU5 C-Ponds Source Area at RFETS







Summary of Ecotoxicological Risk to Great Blue ..erons in the OU5 C-Ponds Source Area at RFETS



Summary of Ecotoxicological Risk to Great Blue Herons in the OU5 C-Ponds Source Area at RFETS

GREAT BLUE HERONS OU5 C-PONDS		EXPOSURE POINT							SUMMARY			
		Fish			Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU5	IR = 0.180 SUF = 1			IR = 0.004 SUF = 1		IR = 0.045 SUF = 1					
MERCURY	X	0.171		0.031	0.393	0.002	1.41E-04	6.35E-06	0.032	0.005	6.40	37.24%
SELENIUM		4.461		0.803	1.353	0.005	0.002	8.34E-05	0.809	0.306	2.64	15.38%
ALUMINUM		NR	12.739	2.293	13018.068	52.072	2.432	0.109	54.475	45.851	1.19	6.91%
COPPER	X	78.919		14.205	23.083	0.092	0.008	3.59E-04	14.298	12.587	1.14	6.61%
MAGNESIUM		NR	NO BCF	—	3157.852	12.631	10.768	0.485	13.116	11.932	1.10	6.40%
TIN		NR	66.240	11.923	12.061	0.048	0.021	0.001	11.972	15.433	0.78	4.51%
CHROMIUM		5.367		0.966	14.042	0.056	0.005	2.14E-04	1.022	1.551	0.66	3.83%
VANADIUM		NR	NO BCF	—	33.892	0.136	0.012	0.001	0.136	0.230	0.59	3.44%
LEAD	X	2.825		0.508	32.420	0.130	0.006	2.84E-04	0.638	1.439	0.44	2.58%
CADMIUM		2.597		0.468	0.898	0.004	0.003	1.16E-04	0.471	1.164	0.40	2.35%
COBALT	X	NR	NO BCF	—	9.581	0.038	0.008	3.58E-04	0.039	0.112	0.35	2.03%
BERYLLIUM		NR	0.018	0.003	0.767	0.003	0.001	4.50E-05	0.006	0.018	0.33	1.94%
ZINC	X	219.885		39.579	94.329	0.377	0.048	0.002	39.959	138.711	0.29	1.68%
LITHIUM	X	NR	NO BCF	—	10.543	0.042	0.020	0.001	0.043	0.213	0.20	1.17%
STRONTIUM	X	NR	1.744	0.314	62.795	0.251	0.337	0.015	0.580	5.288	0.11	0.64%
BARIUM	X	NR	NO BCF	—	177.770	0.711	0.109	0.005	0.716	7.906	0.09	0.53%
MANGANESE		NR	NO BCF	—	521.405	2.086	0.120	0.005	2.091	23.173	0.09	0.53%
BIS(2-ETHYLHEXYL) PHTHALATE	X	NR	0.156	0.028	0.640	0.003	0.002	9.00E-05	0.031	0.450	0.07	0.40%
THALLIUM		NR	ND	—	0.833	0.003	0.002	1.05E-04	0.003	0.046	0.07	0.38%
NITRATE/NITRITE		NR	NO BCF	—	3.570	0.014	0.541	0.024	0.039	0.750	0.05	0.30%
AROCLOR-1254	X	0.035		0.006	ND	—	ND	—	0.006	0.135	0.04	0.26%
ARSENIC		NR	0.034	0.006	4.893	0.020	0.002	1.00E-04	0.026	0.690	0.04	0.22%
AROCLOR-1248		0.030		0.005	ND	—	ND	—	0.005	0.135	0.04	0.22%
ANTIMONY	X	NR	0.020	0.004	ND	—	0.015	0.001	0.004	0.134	0.03	0.17%
MOLYBDENUM		NR	NO BCF	—	4.832	0.019	0.017	0.001	0.020	0.933	0.02	0.12%
DI-n-BUTYL PHTHALATE	X	NR	ND	—	0.110	4.40E-04	ND	—	4.40E-04	0.045	0.01	0.06%
METHYLENE CHLORIDE	X	NR	0.019	0.003	0.020	7.95E-05	0.004	1.65E-04	0.004	0.642	0.01	0.04%
NICKEL		NR	0.890	0.160	15.645	0.063	0.009	3.91E-04	0.223	54.608	<0.01	0.02%
TOLUENE	X	NR	0.070	0.013	0.146	0.001	0.001	4.50E-05	0.013	3.476	<0.01	0.02%
FLUORANTHENE	X	NR	ND	—	0.140	0.001	ND	—	0.001	0.290	<0.01	0.02%
PHENOL	X	NR	ND	—	0.150	0.001	ND	—	0.001	15.501	<0.01	<0.01%
delta-BHC		NR	ND	—	0.004	1.40E-05	ND	—	1.40E-05	0.226	<0.01	<0.01%
ACETONE		NR	0.006	0.001	0.124	4.97E-04	0.014	0.001	0.002	68.362	<0.01	<0.01%
SILVER	X	ND		—	1.700	0.007	0.004	1.62E-04	0.007	861.381	<0.01	<0.01%
1,1,1-TRICHLOROETHANE		NR	ND	—	0.001	4.00E-06	ND	—	4.00E-06	1.008	<0.01	<0.01%
BUTYL BENZYL PHTHALATE	X	NR	ND	—	0.057	2.28E-04	ND	—	2.28E-04	84.619	<0.01	<0.01%

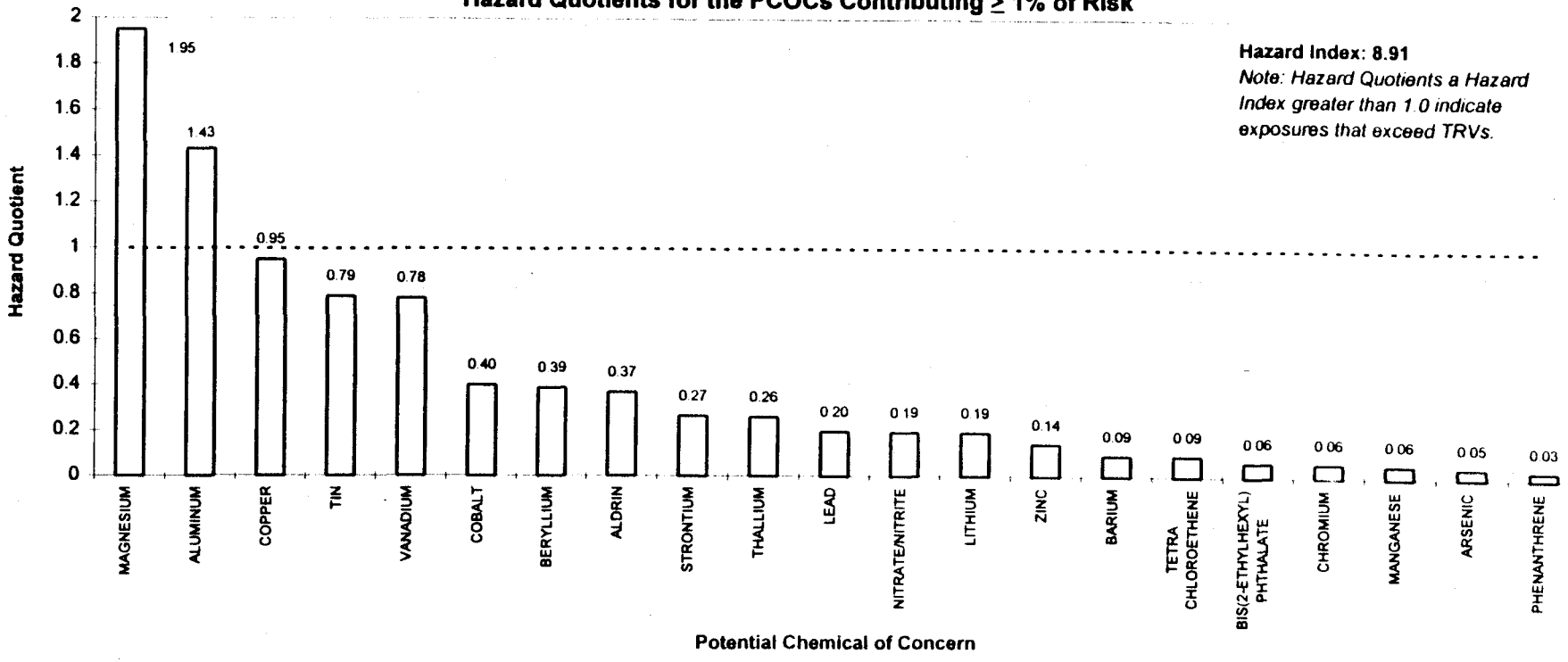
HAZARD INDEX 17.19

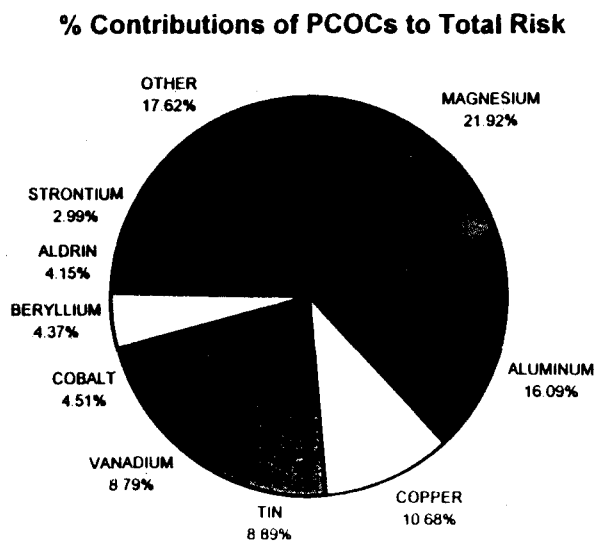
Notes:

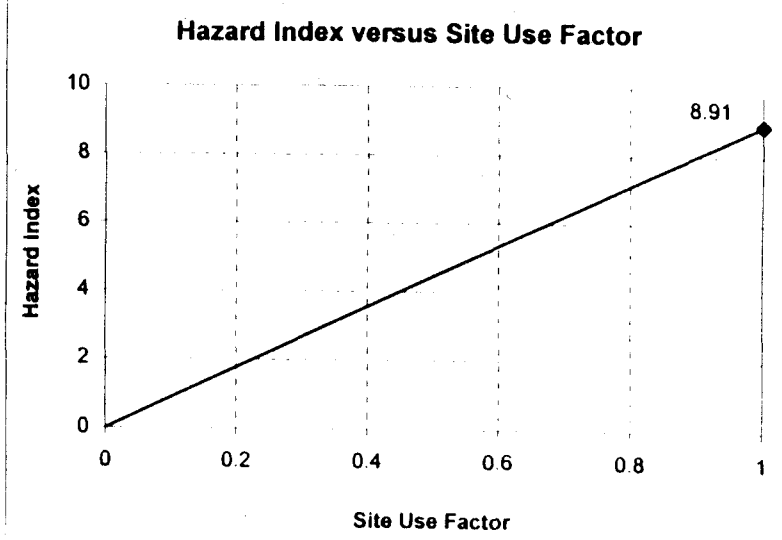
RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor

I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

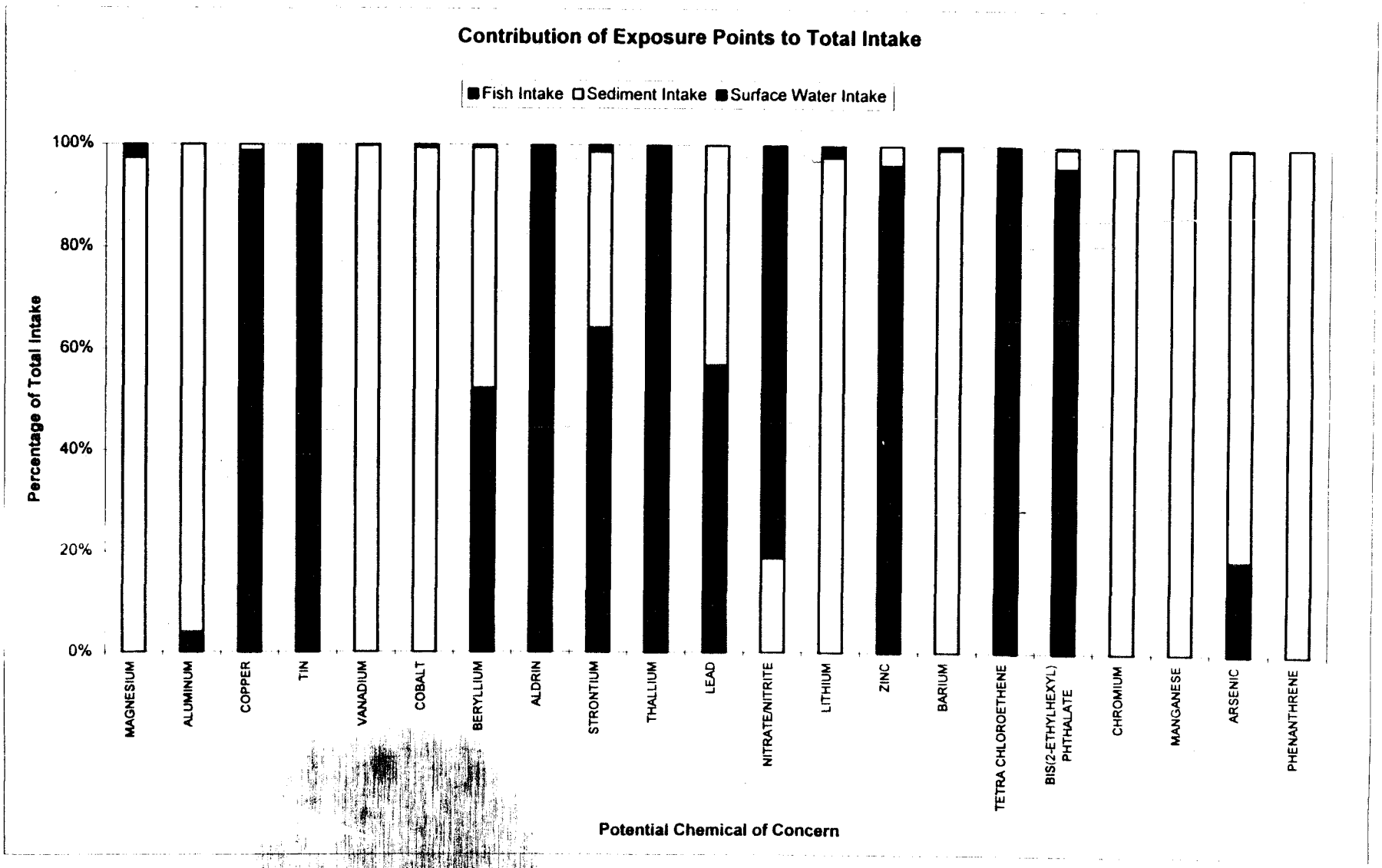
Summary of Ecotoxicological Risk to Great Blue [illegible]ons in the OU1 881 Hillside Source Area at RFETS







Summary of Ecotoxicological Risk to Great Blue H[illegible]ns in the OU1 881 Hillside Source Area at RFETS



Summary of Ecotoxicological Risk to Great Blue Herons in the OU1 881 Hillside Source Area at RFETS

GREAT BLUE HERONS OU1 881 HILLSIDE		EXPOSURE POINT							SUMMARY			
		Fish			Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU1	IR = 0.180 SUF = 1			IR = 0.004 SUF = 1		IR = 0.045 SUF = 1					
MAGNESIUM		NR	NO BCF	—	5670.202	22.681	13.583	0.611	23.292	11.932	1.95	21.92%
ALUMINUM		NR	14.717	2.649	15760.019	63.040	0.926	0.042	65.731	45.851	1.43	16.09%
COPPER		65.700		11.826	36.368	0.145	0.009	4.22E-04	11.972	12.587	0.95	10.68%
TIN		NR	67.886	12.219	ND	—	0.024	0.001	12.221	15.433	0.79	8.89%
VANADIUM		NR	NO BCF	—	44.881	0.180	0.009	3.97E-04	0.180	0.230	0.78	8.79%
COBALT		NR	NO BCF	—	11.094	0.044	0.007	2.93E-04	0.045	0.112	0.40	4.51%
BERYLLIUM		NR	0.020	0.004	0.809	0.003	0.001	4.08E-05	0.007	0.018	0.39	4.37%
ALDRIN		NR	0.092	0.017	ND	—	1.00E-05	4.50E-07	0.017	0.046	0.37	4.15%
STRONTIUM		NR	5.033	0.906	121.257	0.485	0.413	0.019	1.410	5.288	0.27	2.99%
THALLIUM		NR	0.068	0.012	ND	—	0.002	8.84E-05	0.012	0.046	0.26	2.93%
LEAD		0.900		0.162	30.594	0.122	0.003	1.56E-04	0.285	1.439	0.20	2.22%
NITRATE/NITRITE		NR	NO BCF	—	6.793	0.027	2.624	0.118	0.145	0.750	0.19	2.17%
LITHIUM		NR	NO BCF	—	10.000	0.040	0.021	0.001	0.041	0.213	0.19	2.16%
ZINC		106.000		19.080	186.114	0.744	0.051	0.002	19.827	138.711	0.14	1.60%
BARIUM		NR	NO BCF	—	180.333	0.721	0.123	0.006	0.727	7.906	0.09	1.03%
TETRA CHLOROETHENE	X	NR	0.637	0.115	ND	—	0.003	1.27E-04	0.115	1.253	0.09	1.03%
BIS(2-ETHYLHEXYL) PHTHALATE		NR	0.156	0.028	0.280	0.001	0.002	9.00E-05	0.029	0.450	0.06	0.72%
CHROMIUM		ND		—	23.900	0.096	0.004	1.78E-04	0.096	1.551	0.06	0.69%
MANGANESE		NR	NO BCF	—	335.402	1.342	0.063	0.003	1.344	23.173	0.06	0.65%
ARSENIC		NR	0.033	0.006	6.464	0.026	0.002	9.19E-05	0.032	0.690	0.05	0.52%
PHENANTHRENE	X	NR	ND	—	0.190	0.001	ND	—	0.001	0.029	0.03	0.39%
ANTIMONY		NR	0.015	0.003	ND	—	0.015	0.001	0.003	0.134	0.02	0.25%
1,1,1-TRICHLOROETHANE	X	NR	0.116	0.021	ND	—	0.003	1.13E-04	0.021	1.008	0.02	0.23%
TRICHLOROETHENE	X	NR	0.105	0.019	ND	—	0.003	1.16E-04	0.019	0.993	0.02	0.21%
BENZO(k)FLUORANTHENE	X	NR	ND	—	0.110	4.40E-04	ND	—	4.40E-04	0.029	0.02	0.17%
SELENIUM		ND		—	0.919	0.004	0.002	8.79E-05	0.004	0.306	0.01	0.15%
TOLUENE	X	NR	0.184	0.033	0.005	2.00E-05	0.003	1.19E-04	0.033	3.476	0.01	0.11%
METHYLENE CHLORIDE		NR	0.020	0.004	ND	—	0.004	1.70E-04	0.004	0.642	0.01	0.07%
FLUORANTHENE	X	NR	ND	—	0.380	0.002	ND	—	0.002	0.290	0.01	0.08%
PYRENE	X	NR	ND	—	0.310	0.001	ND	—	0.001	0.290	<0.01	0.04%
NICKEL		NR	0.767	0.138	14.200	0.057	0.008	3.42E-04	0.195	54.608	<0.01	0.04%
CADMIUM		ND		—	0.827	0.003	0.002	7.24E-05	0.003	1.164	<0.01	0.03%
BENZO(b)FLUORANTHENE	X	NR	ND	—	0.190	0.001	ND	—	0.001	0.289	<0.01	0.04%
CHRYSENE	X	NR	ND	—	0.190	0.001	ND	—	0.001	0.290	<0.01	0.04%
MERCURY		ND		—	ND	—	1.18E-04	5.31E-06	5.31E-06	0.005	<0.01	0.01%
MOLYBDENUM		NR	NO BCF	—	ND	—	0.018	0.001	0.001	0.933	<0.01	0.01%
TOTAL XYLENES	X	NR	0.159	0.029	ND	—	0.001	4.50E-05	0.029	91.697	<0.01	<0.01%
1,2-DICHLOROETHANE	X	NR	0.021	0.004	ND	—	0.003	1.20E-04	0.004	15.067	<0.01	<0.01%

Summary of Ecotoxicological Risk to Great Blue Herons in the OU1 881 Hillside Source Area at RFETS

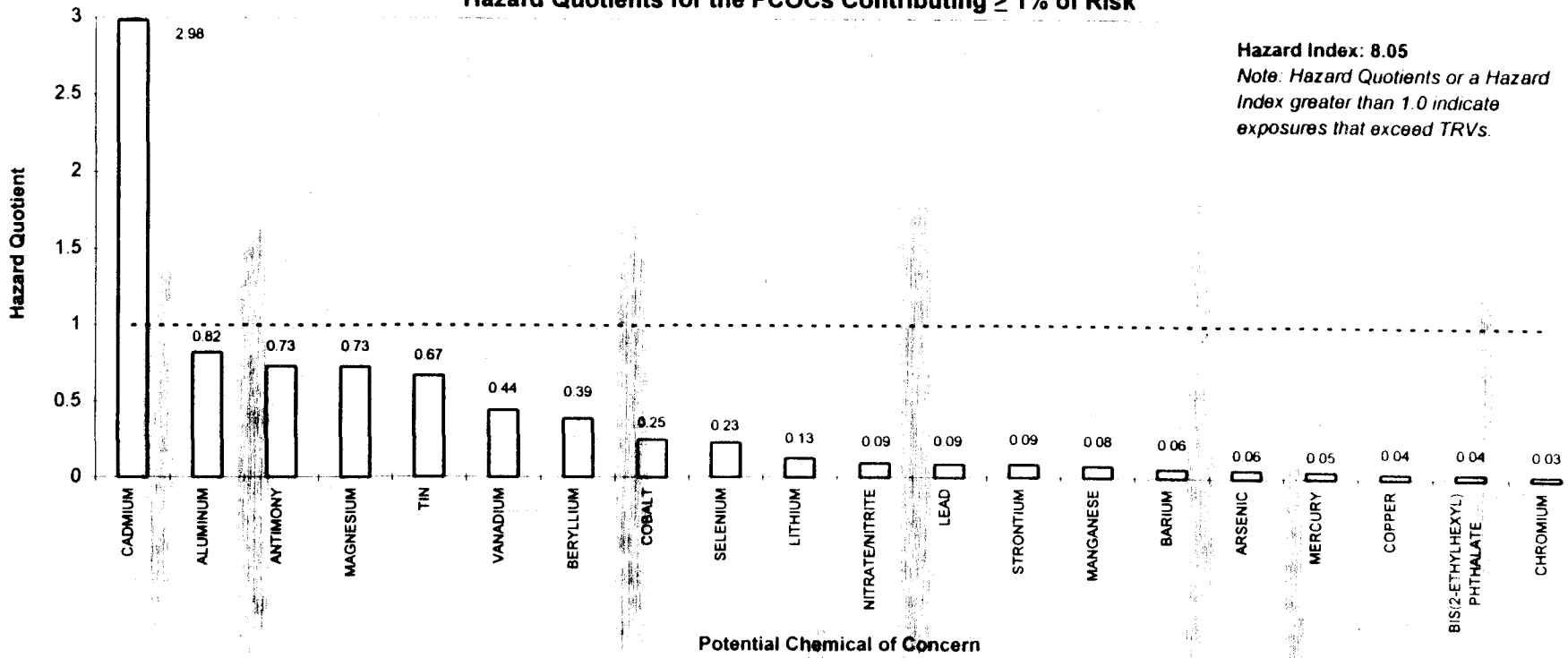
GREAT BLUE HERONS OU1 881 HILLSIDE		EXPOSURE POINT							SUMMARY			
		Fish			Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU1	IR = 0.180 SUF = 1			IR = 0.004 SUF = 1		IR = 0.045 SUF = 1					
ACETONE		NR	0.003	4.92E-04	0.036	1.44E-04	0.007	3.15E-04	0.001	68.362	<0.01	<0.01%
SILVER		ND		—	ND	—	0.003	1.53E-04	1.53E-04	861.381	<0.01	<0.01%

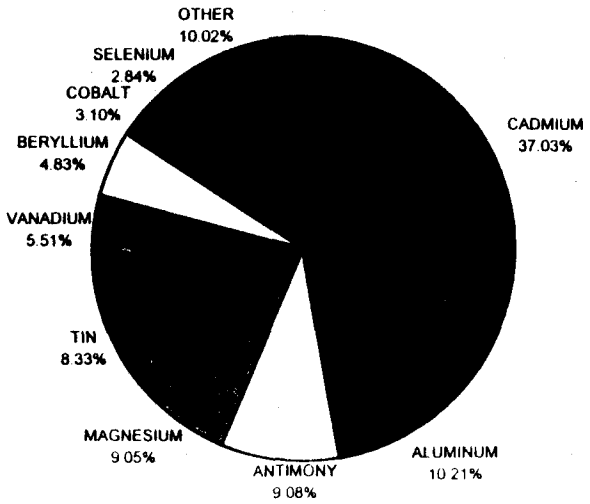
HAZARD INDEX 8.91

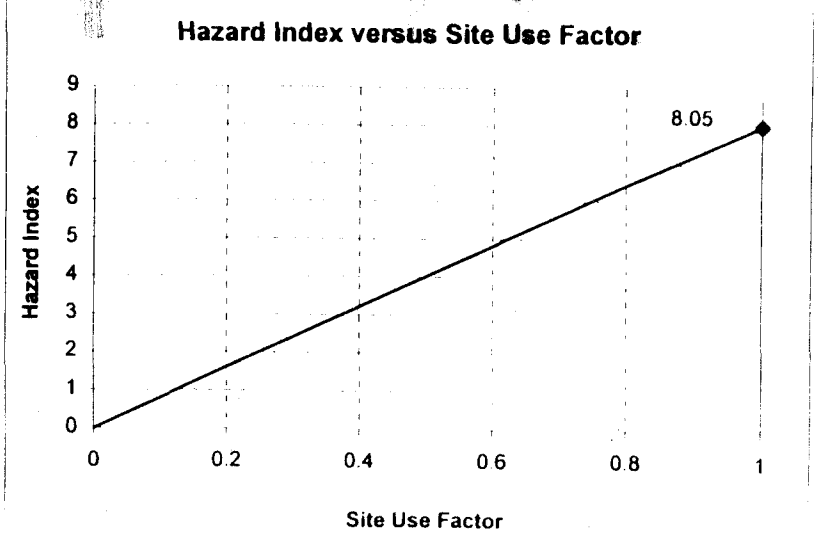
Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

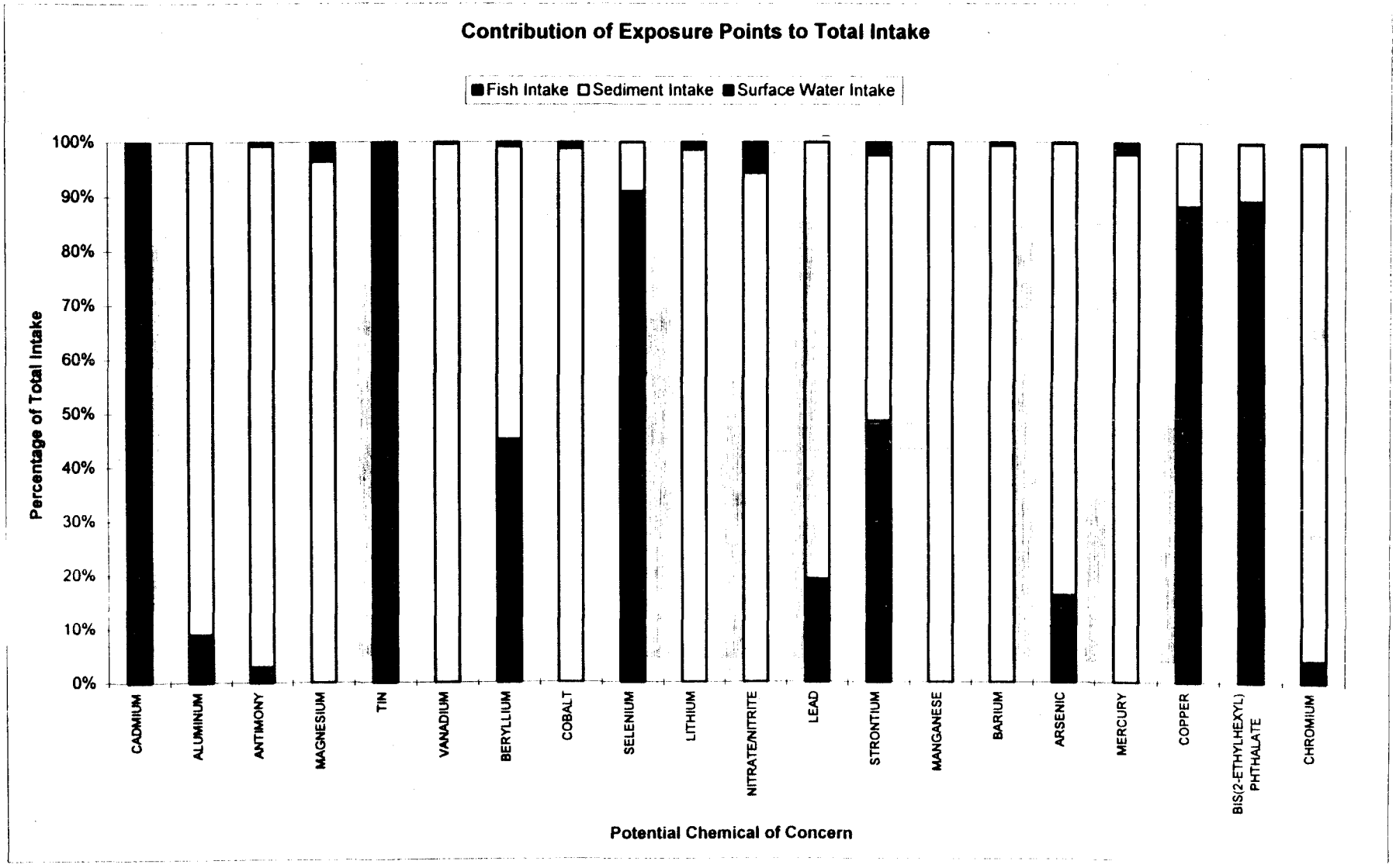
Summary of Ecotoxicological Risk to Great Blue ..erons in the OU5 Ash Pits Source Area at RFETS







Summary of Ecotoxicological Risk to Great Blue Herons in the OU5 Ash Pits Source Area at RFETS



Summary of Ecotoxicological Risk to Great Blue Herons in the OU5 Ash Pits Source Area at RFETS

GREAT BLUE HERONS OU5 ASH PITS		EXPOSURE POINT							SUMMARY			
		Fish			Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU5	IR = 0.180 SUF = 1			IR = 0.004 SUF = 1		IR = 0.045 SUF = 1					
CADMIUM		NR	19.257	3.466	1.197	0.005	0.001	4.50E-05	3.471	1.164	2.98	37.03%
ALUMINUM		NR	18.747	3.375	8571.142	34.285	0.855	0.038	37.698	45.851	0.82	10.21%
ANTIMONY	X	NR	0.016	0.003	23.639	0.095	0.015	0.001	0.098	0.134	0.73	9.08%
MAGNESIUM		NR	NO BCF	—	2095.530	8.382	6.862	0.309	8.691	11.932	0.73	9.05%
TIN		NR	57.281	10.311	9.207	0.037	0.019	0.001	10.348	15.433	0.67	8.33%
VANADIUM		NR	NO BCF	—	25.339	0.101	0.009	3.87E-04	0.102	0.230	0.44	5.51%
BERYLLIUM		NR	0.018	0.003	0.969	0.004	0.001	6.16E-05	0.007	0.018	0.39	4.83%
COBALT	X	NR	NO BCF	—	6.823	0.027	0.007	3.30E-04	0.028	0.112	0.25	3.10%
SELENIUM		NR	0.354	0.064	1.572	0.006	0.001	4.95E-05	0.070	0.306	0.23	2.84%
LITHIUM	X	NR	NO BCF	—	6.612	0.026	0.009	3.92E-04	0.027	0.213	0.13	1.57%
NITRATE/NITRITE		NR	NO BCF	—	16.528	0.066	0.088	0.004	0.070	0.750	0.09	1.16%
LEAD	X	NR	0.135	0.024	25.470	0.102	0.004	1.70E-04	0.126	1.439	0.09	1.09%
STRONTIUM	X	NR	1.243	0.224	56.300	0.225	0.247	0.011	0.460	5.288	0.09	1.08%
MANGANESE		NR	NO BCF	—	445.908	1.784	0.148	0.007	1.790	23.173	0.08	0.96%
BARIUM	X	NR	NO BCF	—	117.818	0.471	0.071	0.003	0.474	7.906	0.06	0.74%
ARSENIC		NR	0.034	0.006	7.845	0.031	0.002	9.39E-05	0.038	0.690	0.06	0.68%
MERCURY	X	NR	ND	—	0.056	2.23E-04	1.10E-04	4.95E-06	2.28E-04	0.005	0.05	0.57%
COPPER	X	NR	2.222	0.400	13.145	0.053	0.006	2.54E-04	0.453	12.587	0.04	0.45%
BIS(2-ETHYLHEXYL) PHTHALATE	X	NR	0.078	0.014	0.410	0.002	0.001	4.50E-05	0.016	0.450	0.04	0.44%
CHROMIUM		NR	0.010	0.002	10.564	0.042	0.004	1.75E-04	0.044	1.551	0.03	0.35%
ZINC	X	NR	12.447	2.240	383.943	1.536	0.018	0.001	3.777	138.711	0.03	0.34%
THALLIUM		NR	ND	—	0.280	0.001	ND	—	0.001	0.046	0.02	0.27%
MOLYBDENUM		NR	NO BCF	—	3.529	0.014	0.020	0.001	0.015	0.933	0.02	0.20%
METHYLENE CHLORIDE	X	NR	0.025	0.004	0.012	4.85E-05	0.005	2.13E-04	0.005	0.642	0.01	0.10%
NICKEL		NR	ND	—	14.020	0.056	0.009	3.92E-04	0.056	54.608	<0.01	0.01%
1,2-DICHLOROETHANE		NR	0.024	0.004	ND	—	0.003	1.38E-04	0.004	15.067	<0.01	<0.01%
ACETONE		NR	0.003	0.001	1.165	0.005	0.009	4.03E-04	0.006	68.362	<0.01	<0.01%
SILVER	X	NR	0.004	0.001	2.400	0.010	0.003	1.45E-04	0.010	861.381	<0.01	<0.01%

HAZARD INDEX ***8.05***

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
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SUF = Site Use Factor
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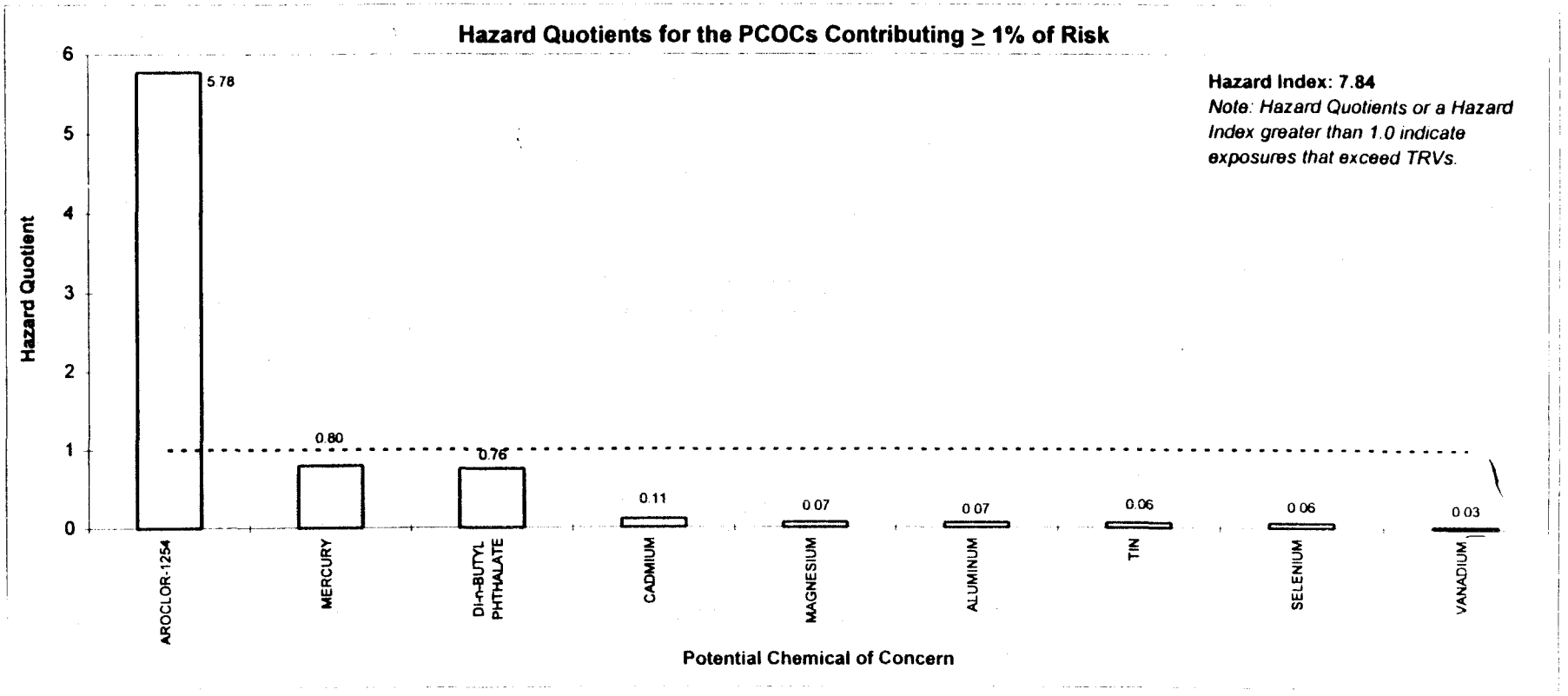
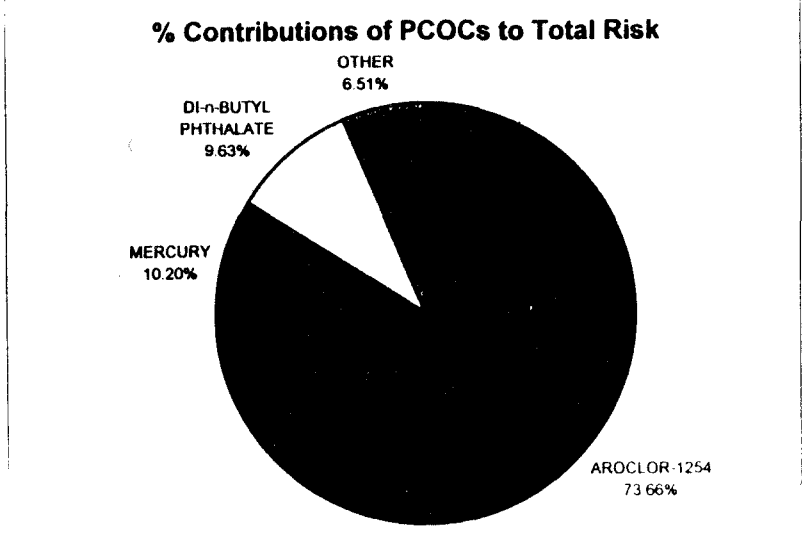
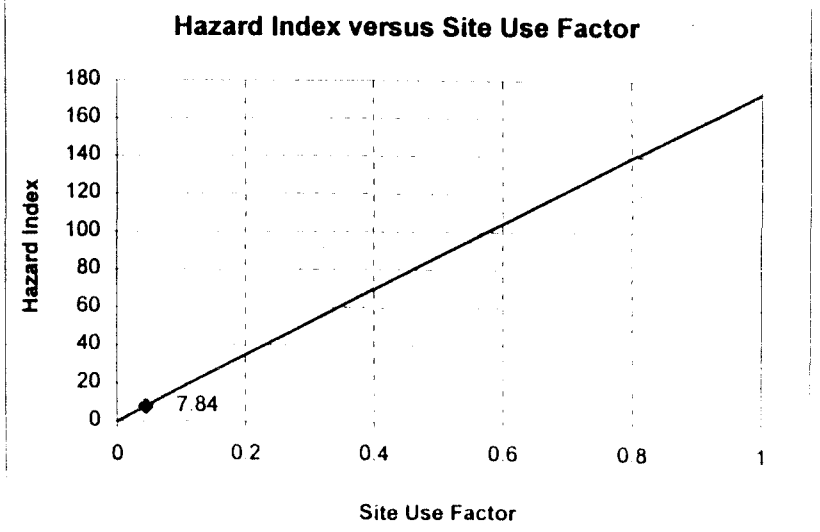
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

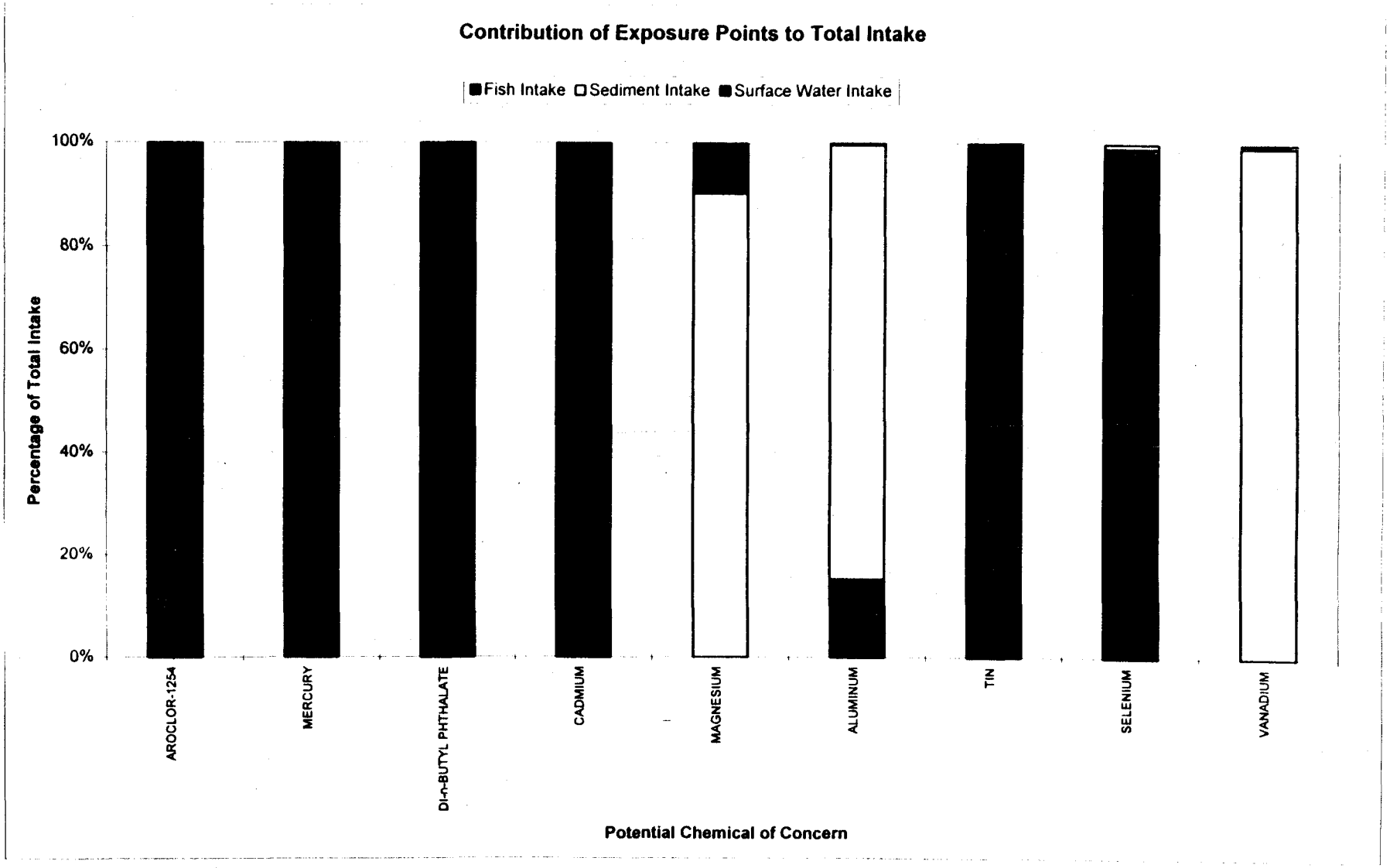
Summary of Ecotoxicological Risk to Great Blue Herons in the OU2 903 Pad Source Area at RFETS







Summary of Ecotoxicological Risk to Great Blue Herons in the OU2 903 Pad Source Area at RFETS



Summary of Ecotoxicological Risk to Great Blue Herons in the OU2 903 Pad Source Area at RFETS

GREAT BLUE HERONS OU2 903 PAD		EXPOSURE POINT							SUMMARY			
		Fish			Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU2	IR = 0.180 SUF = 0.045			IR = 0.004 SUF = 0.045		IR = 0.045 SUF = 0.045					
AROCLOR-1254	X	NR	96.315	0.780	0.260	0.000	0.002	0.000	0.780	0.135	5.78	73.66%
MERCURY		NR	0.477	0.004	0.040	0.000	0.000	0.000	0.004	0.005	0.80	10.20%
DI-n-BUTYL PHTHALATE	X	NR	4.136	0.034	0.065	0.000	0.002	0.000	0.034	0.045	0.76	9.63%
CADMIUM		NR	16.120	0.131	0.950	0.000	0.002	0.000	0.131	1.164	0.11	1.43%
MAGNESIUM		NR	NO BCF	—	4179.821	0.752	39.934	0.081	0.833	11.932	0.07	0.89%
ALUMINUM		NR	56.849	0.460	14104.468	2.539	5.480	0.011	3.010	45.851	0.07	0.84%
TIN		NR	119.444	0.967	18.800	0.003	0.053	0.000	0.971	15.433	0.06	0.80%
SELENIUM		NR	2.306	0.019	0.880	0.000	0.008	0.000	0.019	0.306	0.06	0.79%
VANADIUM		NR	NO BCF	—	37.422	0.007	0.026	0.000	0.007	0.230	0.03	0.39%
COBALT		NR	NO BCF	—	9.088	0.002	0.011	0.000	0.002	0.112	0.02	0.23%
BERYLLIUM		NR	0.013	0.000	0.903	0.000	0.001	0.000	0.000	0.018	0.02	0.19%
STRONTIUM		NR	4.801	0.039	97.592	0.018	1.028	0.002	0.059	5.288	0.01	0.14%
TETRACHLOROETHENE		NR	1.420	0.012	ND	—	0.006	0.000	0.012	1.253	0.01	0.12%
LITHIUM		NR	NO BCF	—	12.183	0.002	0.071	0.000	0.002	0.213	0.01	0.12%
ANTIMONY		NR	0.022	0.000	4.900	0.001	0.020	0.000	0.001	0.134	0.01	0.10%
LEAD	X	NR	0.277	0.002	32.749	0.006	0.007	0.000	0.008	1.439	0.01	0.07%
TRICHLOROETHENE		NR	0.498	0.004	ND	—	0.012	0.000	0.004	0.993	0.00	0.05%
THALLIUM		NR	ND	—	1.000	0.000	ND	—	0.000	0.046	0.00	0.05%
BARIUM		NR	NO BCF	—	164.776	0.030	0.261	0.001	0.030	7.906	0.00	0.05%
4,4'-DDT	X	NR	ND	—	0.006	0.000	ND	—	0.000	0.000	0.00	0.04%
NITRATE/NITRITE		NR	NO BCF	—	4.124	0.001	0.793	0.002	0.002	0.750	0.00	0.03%
CHROMIUM	X	NR	0.020	0.000	14.581	0.003	0.011	0.000	0.003	1.551	0.00	0.02%
MANGANESE		NR	NO BCF	—	236.041	0.042	0.312	0.001	0.043	23.173	0.00	0.02%
COPPER		NR	2.264	0.018	23.031	0.004	0.024	0.000	0.023	12.587	0.00	0.02%
ZINC		NR	26.227	0.212	109.953	0.020	0.227	0.000	0.233	138.711	0.00	0.02%
ARSENIC		NR	0.050	0.000	5.742	0.001	0.006	0.000	0.001	0.690	0.00	0.02%
PHENANTHRENE	X	NR	ND	—	0.190	0.000	ND	—	0.000	0.029	0.00	0.02%
MOLYBDENUM		NR	NO BCF	—	6.700	0.001	0.016	0.000	0.001	0.933	0.00	0.01%
BENZO(k)FLUORANTHENE	X	NR	ND	—	0.110	0.000	ND	—	0.000	0.029	0.00	0.01%
BENZO(a)PYRENE	X	NR	ND	—	0.110	0.000	ND	—	0.000	0.029	0.00	0.01%
METHYLENE CHLORIDE		NR	0.019	0.000	0.009	0.000	0.004	0.000	0.000	0.642	0.00	0.00%
NICKEL		NR	1.202	0.010	17.615	0.003	0.014	0.000	0.013	54.608	0.00	0.00%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	ND	—	0.540	0.000	ND	—	0.000	0.450	0.00	0.00%
PYRENE	X	NR	ND	—	0.260	0.000	ND	—	0.000	0.290	0.00	0.00%
FLUORANTHENE	X	NR	ND	—	0.230	0.000	ND	—	0.000	0.290	0.00	0.00%
CHRYSENE	X	NR	ND	—	0.140	0.000	ND	—	0.000	0.290	0.00	0.00%
BENZO(b)FLUORANTHENE	X	NR	ND	—	0.120	0.000	ND	—	0.000	0.289	0.00	0.00%

Summary of Ecotoxicological Risk to Great Blue Herons in the OU2 903 Pad Source Area at RFETS

GREAT BLUE HERONS OU2 903 PAD		EXPOSURE POINT							SUMMARY			
		Fish			Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU2	IR = 0.180 SUF = 0.045			IR = 0.004 SUF = 0.045		IR = 0.045 SUF = 0.045					
BENZO(a)ANTHRACENE	X	NR	ND	—	0.110	0.000	ND	—	0.000	0.290	0.00	0.00%
ACETONE		NR	0.005	0.000	0.066	0.000	0.013	0.000	0.000	68.362	0.00	0.00%
DI-n-OCTYL PHTHALATE		NR	ND	—	0.210	0.000	ND	—	0.000	37.020	0.00	0.00%
gamma-BHC (LINDANE)		NR	ND	—	0.004	0.000	ND	—	0.000	1.500	0.00	0.00%
SILVER		NR	0.003	0.000	1.700	0.000	0.005	0.000	0.000	861.381	0.00	0.00%
TOLUENE		NR	ND	—	0.002	0.000	ND	—	0.000	3.476	0.00	0.00%

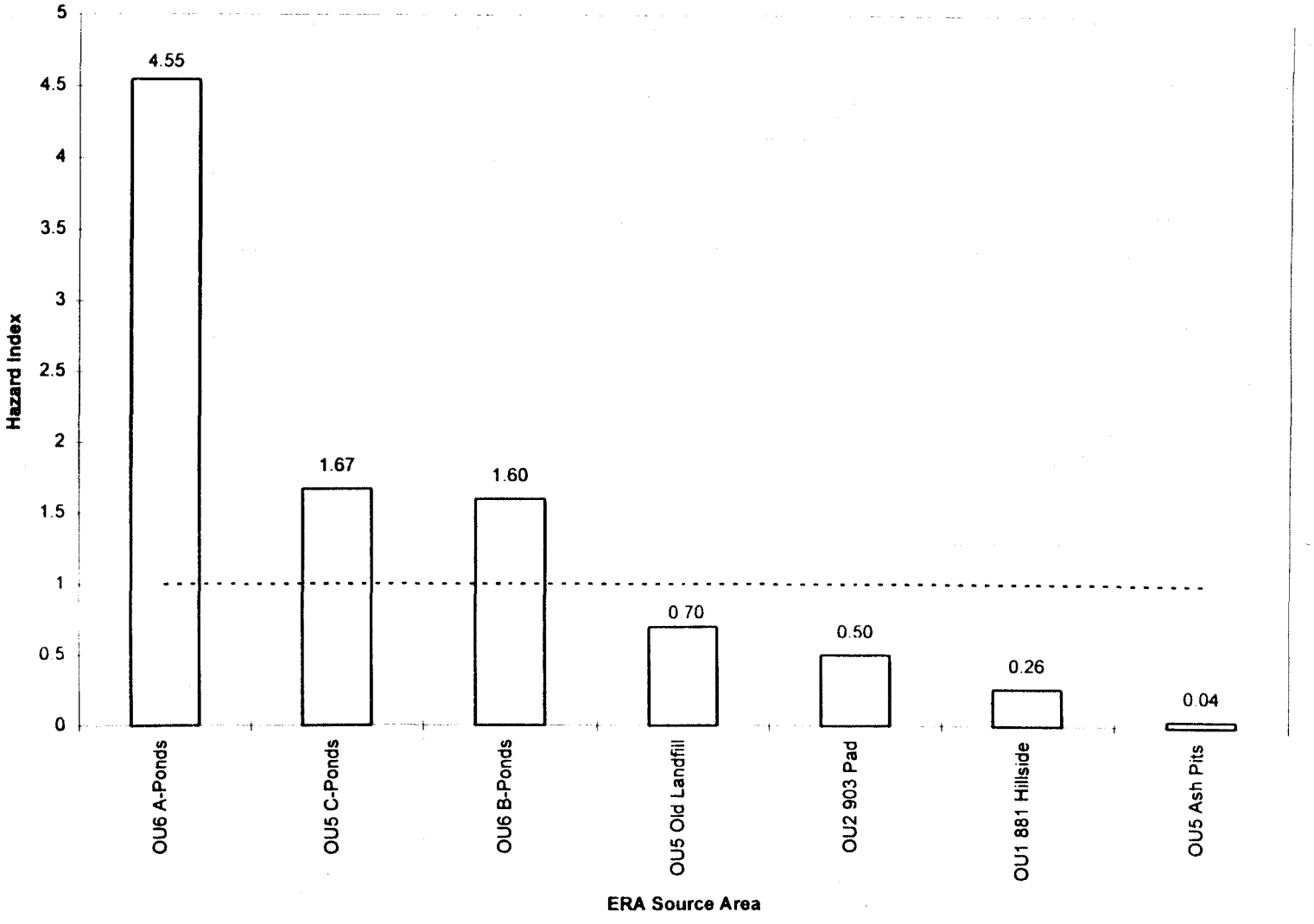
HAZARD INDEX 7.84

Notes:

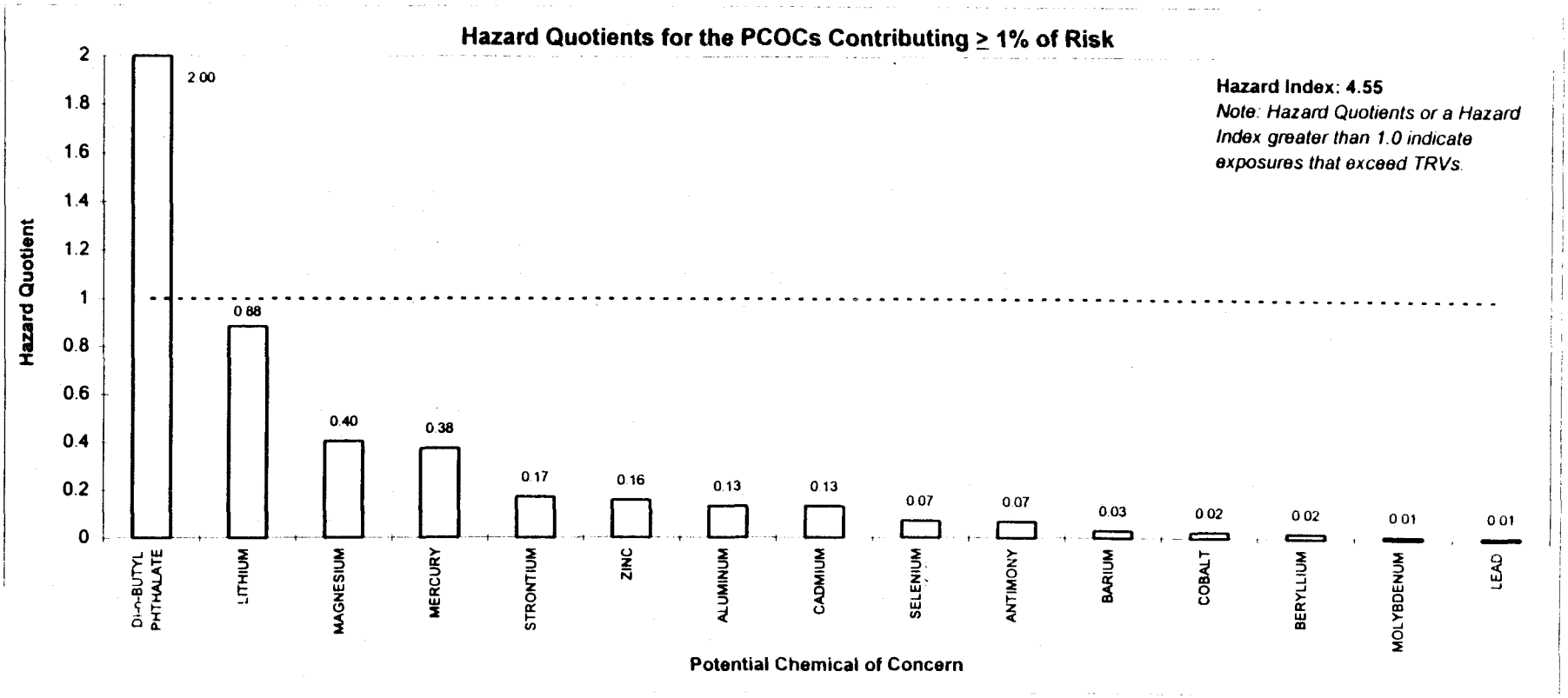
RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

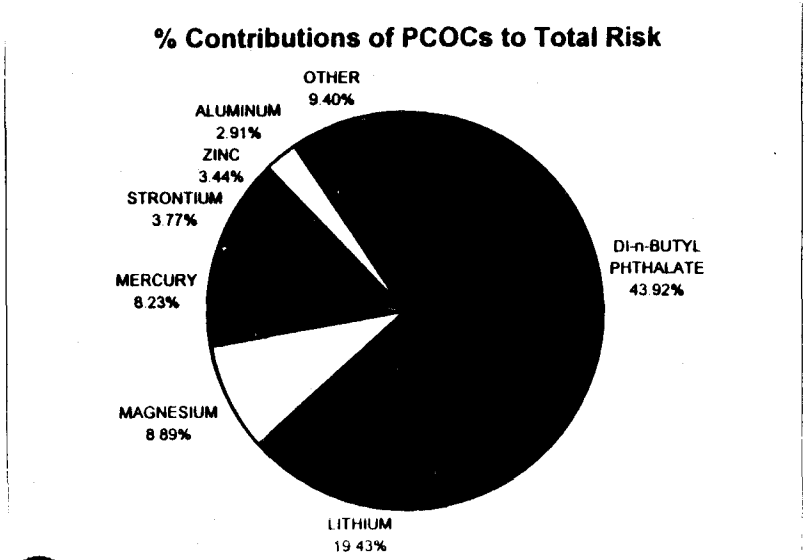
Summary of Ecotoxicological Risk to Mallards

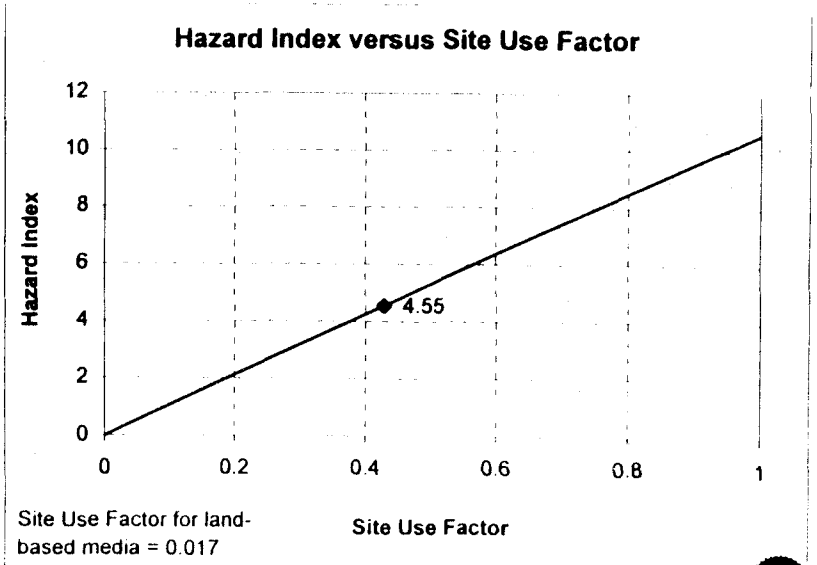
Summary of Ecotoxicological Risk to Mallards at RFETS



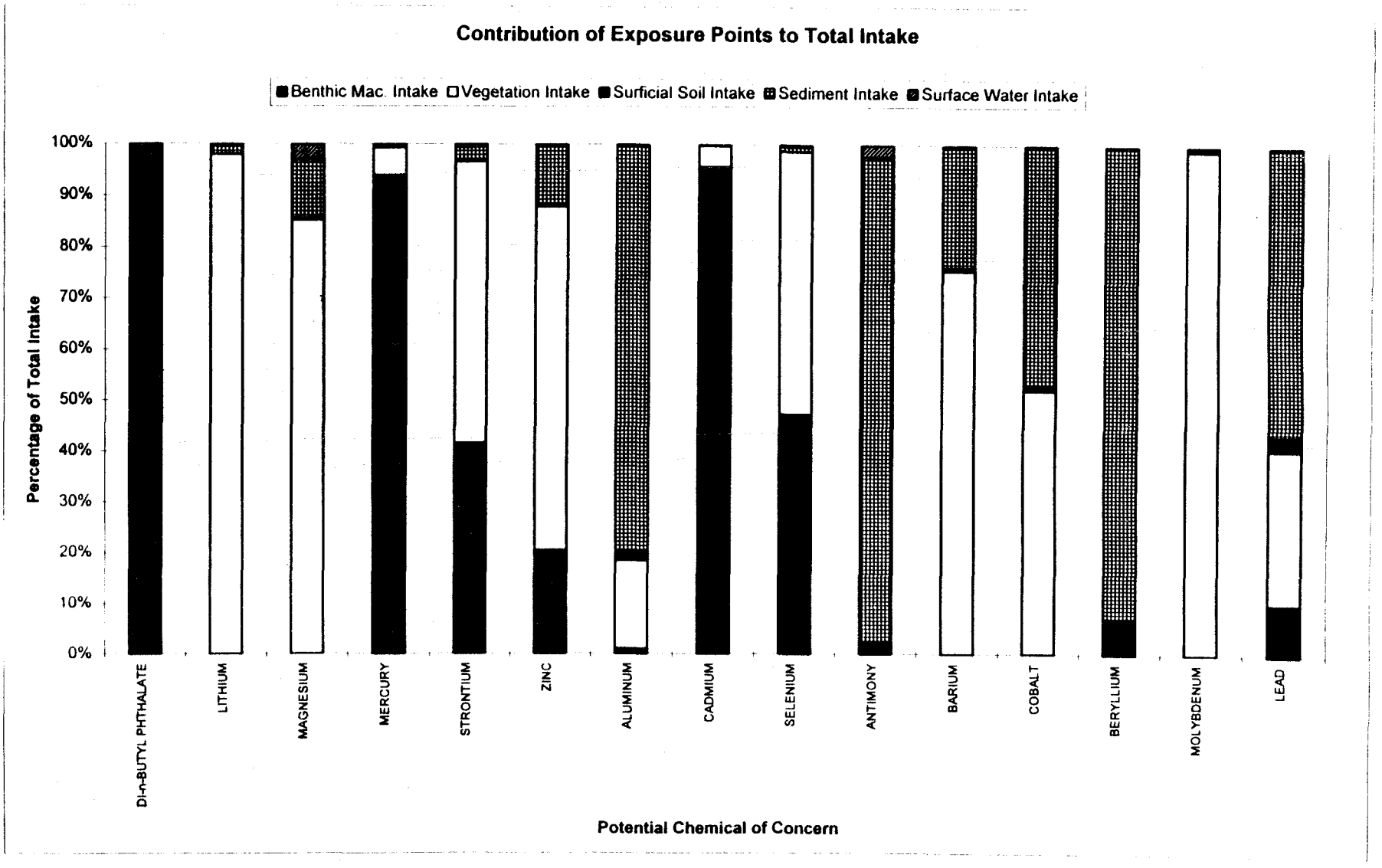
Summary of Ecotoxicological Risk to Mallards in the OU6 A-Ponds Source Area at RFETS







Summary of Ecotoxicological Risk to Mallar... in the OU6 A-Ponds Source Area at RFETS



Summary of Ecotoxicological Risk to Mallards in the OU6 A-Ponds Source Area at RFETS

MALLARDS OU6 A-PONDS		EXPOSURE POINT												SUMMARY			
		Benthic Macroinvertebrates			Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU6	IR = 0.039 SUF = 0.428			IR = 0.013 SUF = 0.428			IR = 0.001 SUF = 0.017		IR = 0.001 SUF = 0.428		IR = 0.056 SUF = 0.428					
DI-n-BUTYL PHTHALATE	X	NR	6.832	0.114	NR	NR	—	ND	—	ND	—	0.002	4.79E-05	0.114	0.057	2.00	43.92%
LITHIUM		NR	NO BCF	—	37.901		0.211	4.800	8.16E-05	8.270	0.004	0.031	0.001	0.215	0.243	0.88	19.43%
MAGNESIUM	X	NR	NO BCF	—	2252.596		12.533	1880.000	0.032	3921.004	1.678	18.851	0.452	14.695	36.287	0.40	8.89%
MERCURY	X	NR	0.529	0.009	0.090		0.001	ND	—	0.142	6.06E-05	1.49E-04	3.57E-06	0.009	0.024	0.38	8.23%
STRONTIUM	X	NR	28.275	0.472	112.501		0.626	37.100	0.001	73.117	0.031	0.278	0.007	1.137	6.623	0.17	3.77%
ZINC	X	NR	5.798	0.097	57.285		0.319	65.800	0.001	130.564	0.056	0.008	1.97E-04	0.473	3.017	0.16	3.44%
ALUMINUM		NR	4.700	0.078	238.686		1.328	7830.000	0.133	14176.386	6.067	0.405	0.010	7.617	57.422	0.13	2.91%
CADMIUM		NR	11.073	0.185	1.400		0.008	2.200	3.74E-05	0.945	4.04E-04	0.001	2.31E-05	0.193	1.458	0.13	2.91%
SELENIUM		NR	0.773	0.013	2.516		0.014	ND	—	0.640	2.74E-04	0.003	7.87E-05	0.027	0.384	0.07	1.54%
ANTIMONY	X	NR	0.011	1.87E-04	ND		—	ND	—	20.227	0.009	0.009	2.12E-04	0.009	0.132	0.07	1.50%
BARIUM	X	NR	NO BCF	—	40.567		0.226	100.000	0.002	163.378	0.070	0.062	0.001	0.299	9.901	0.03	0.66%
COBALT	X	NR	NO BCF	—	1.000		0.006	7.100	1.21E-04	11.590	0.005	0.001	3.50E-05	0.011	0.445	0.02	0.54%
BERYLLIUM		NR	ND	—	ND		—	1.300	2.21E-05	0.710	3.04E-04	ND	—	3.26E-04	0.015	0.02	0.48%
MOLYBDENUM	X	NR	NO BCF	—	3.100		0.017	5.300	9.01E-05	ND	—	0.003	7.38E-05	0.017	1.478	0.01	0.25%
LEAD	X	NR	0.124	0.002	1.107		0.006	33.000	0.001	26.601	0.011	0.003	7.95E-05	0.020	1.802	0.01	0.24%
COPPER	X	NR	0.424	0.007	24.122		0.134	5.000	8.50E-05	22.165	0.009	0.002	5.03E-05	0.151	15.763	0.01	0.21%
MANGANESE	X	NR	NO BCF	—	42.435		0.236	1110.000	0.019	362.368	0.155	0.179	0.004	0.414	49.511	0.01	0.18%
TIN		NR	ND	—	5.798		0.032	93.300	0.002	ND	—	ND	—	0.034	4.519	0.01	0.17%
CHROMIUM	X	NR	0.005	8.21E-05	ND		—	9.000	1.53E-04	13.994	0.006	0.002	3.91E-05	0.006	1.033	0.01	0.13%
PHENANTHRENE	X	NR	ND	—	NR	NR	—	ND	—	0.311	1.33E-04	ND	—	1.33E-04	0.036	<0.01	0.08%
BENZO(a)PYRENE	X	NR	ND	—	NR	NR	—	ND	—	0.282	1.21E-04	ND	—	1.21E-04	0.036	<0.01	0.07%
THALLIUM		NR	ND	—	ND		—	ND	—	0.690	2.95E-04	ND	—	2.95E-04	0.105	<0.01	0.06%
BENZO(k)FLUORANTHENE	X	NR	ND	—	NR	NR	—	ND	—	0.200	8.56E-05	ND	—	8.56E-05	0.036	<0.01	0.05%
VANADIUM	X	NR	NO BCF	—	1.700		0.009	51.100	0.001	38.875	0.017	0.002	5.50E-05	0.027	11.499	<0.01	0.05%
ARSENIC	X	NR	0.065	0.001	0.920		0.005	2.200	3.74E-05	6.354	0.003	0.004	8.52E-05	0.009	5.128	<0.01	0.04%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	ND	—	NR	NR	—	ND	—	1.241	0.001	ND	—	5.31E-04	0.573	<0.01	0.04%
NICKEL	X	NR	0.358	0.006	14.200		0.079	13.100	2.23E-04	17.820	0.008	0.003	6.66E-05	0.093	68.390	<0.01	0.03%
ANTHRACENE	X	NR	ND	—	NR	NR	—	ND	—	0.088	3.77E-05	ND	—	3.77E-05	0.029	<0.01	0.03%
AROCLOR-1254	X	0.008		1.35E-04	ND		—	ND	—	0.182	7.79E-05	NR	—	2.13E-04	0.172	<0.01	0.03%
4,4'-DDT		NR	NR	—	NR	NR	—	0.026	4.40E-07	ND	—	NR	—	4.40E-07	4.03E-04	<0.01	0.02%
INDENO(1,2,3-cd)PYRENE	X	NR	ND	—	NR	NR	—	ND	—	0.200	8.56E-05	ND	—	8.56E-05	0.091	<0.01	0.02%
FLUORANTHENE	X	NR	ND	—	NR	NR	—	ND	—	0.405	1.74E-04	ND	—	1.74E-04	0.363	<0.01	0.01%
PYRENE	X	NR	ND	—	NR	NR	—	ND	—	0.343	1.47E-04	ND	—	1.47E-04	0.363	<0.01	0.01%
BENZO(b)FLUORANTHENE	X	NR	ND	—	NR	NR	—	ND	—	0.312	1.34E-04	ND	—	1.34E-04	0.362	<0.01	0.01%
BENZO(a)ANTHRACENE	X	NR	ND	—	NR	NR	—	ND	—	0.270	1.16E-04	ND	—	1.16E-04	0.363	<0.01	0.01%
CHRYSENE	X	NR	ND	—	NR	NR	—	ND	—	0.268	1.15E-04	ND	—	1.15E-04	0.363	<0.01	0.01%
METHYLENE CHLORIDE	X	NR	0.011	1.75E-04	NR	ND	—	NR	—	ND	—	0.002	4.79E-05	2.23E-04	0.804	<0.01	0.01%
BENZO(ghi)PERYLENE	X	NR	ND	—	NR	NR	—	ND	—	0.210	8.99E-05	ND	—	8.99E-05	0.363	<0.01	0.01%
AROCLOR-1260	X	0.004		6.44E-05	ND		—	ND	—	ND	—	NR	—	6.44E-05	0.860	<0.01	<0.01%
ALDRIN	X	NR	NR	—	NR	NR	—	ND	—	0.009	3.94E-06	NR	—	3.94E-06	0.057	<0.01	<0.01%
ACETONE	X	NR	ND	—	NR	0.693	0.004	NR	—	0.230	9.84E-05	ND	—	3.95E-03	85.614	<0.01	<0.01%
TOLUENE	X	NR	ND	—	NR	0.016	8.87E-05	NR	—	0.178	7.61E-05	ND	—	1.65E-04	4.353	<0.01	<0.01%
PHENOL	X	NR	ND	—	NR	NR	—	ND	—	0.110	4.71E-05	ND	—	4.71E-05	19.413	<0.01	<0.01%

Summary of Ecotoxicological Risk to Mallards in the OU6 A-Ponds Source Area at RFETS

MALLARDS OU6 A-PONDS		EXPOSURE POINT												SUMMARY			
		Benthic Macroinvertebrates			Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU6	IR = 0.039 SUF = 0.428			IR = 0.013 SUF = 0.428			IR = 0.001 SUF = 0.017		IR = 0.001 SUF = 0.428		IR = 0.056 SUF = 0.428					
delta-BHC		NR	NR	—	NR	NR	—	0.023	3.90E-07	ND	—	NR	—	3.90E-07	0.287	<0.01	<0.01%
DI-n-OCTYL PHTHALATE	X	NR	ND	—	NR	NR	—	ND	—	0.130	5.56E-05	ND	—	5.56E-05	46.363	<0.01	<0.01%
ACENAPHTHENE	X	NR	ND	—	NR	NR	—	ND	—	0.089	3.81E-05	ND	—	3.81E-05	36.331	<0.01	<0.01%
BENZENE	X	NR	ND	—	NR	ND	—	NR	—	0.003	1.28E-06	ND	—	1.28E-06	8.327	<0.01	<0.01%
SILVER	X	NR	ND	—	ND		—	ND	—	ND	—	0.002	4.47E-05	4.47E-05	1078.772	<0.01	<0.01%

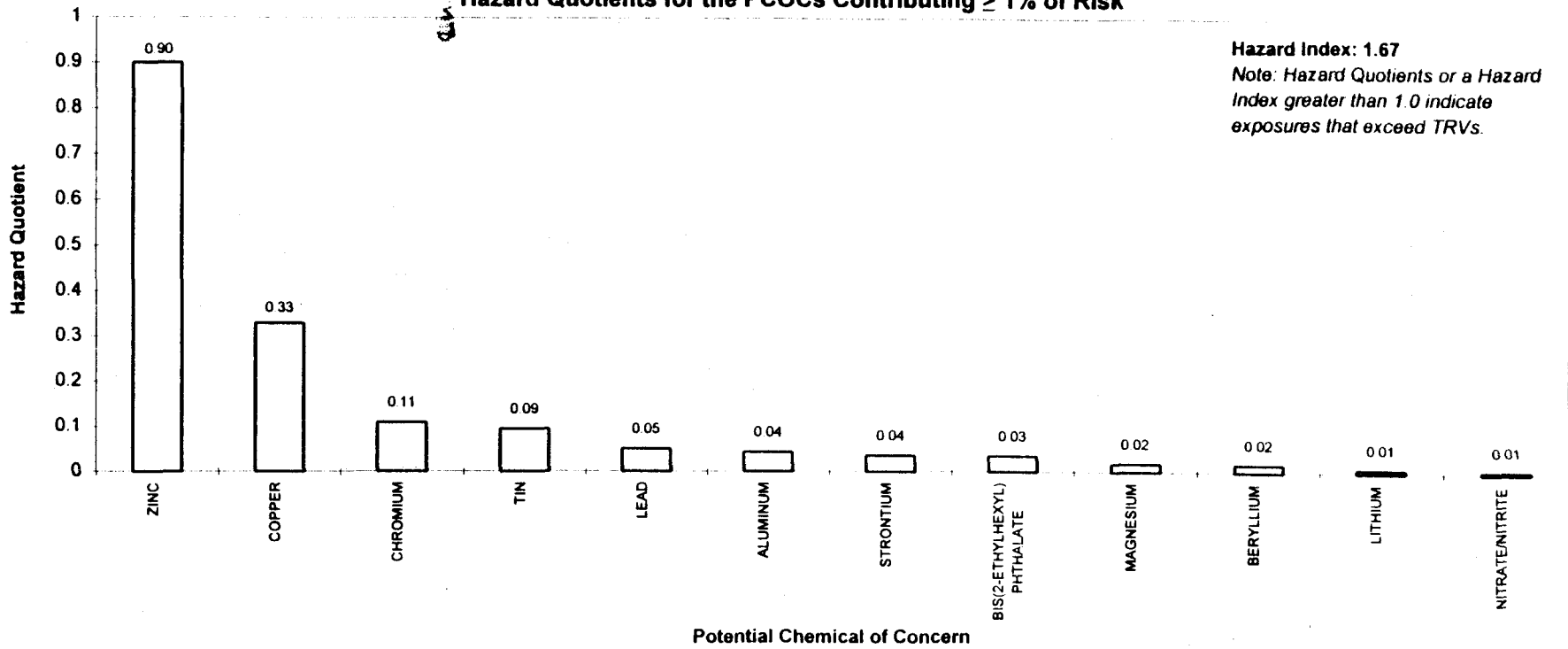
HAZARD INDEX 4.55

Notes:

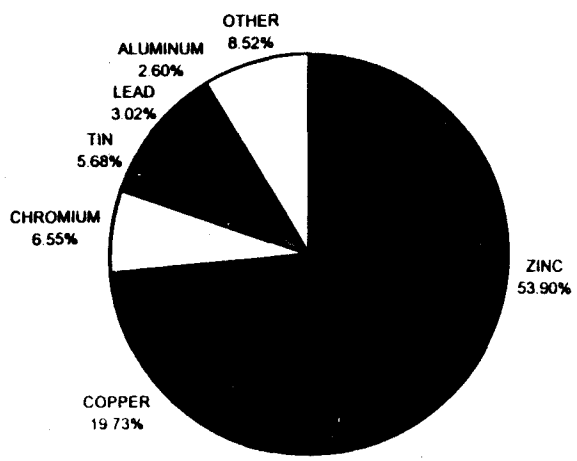
RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mallards in the OU5 C-Ponds Source Area at RFETS

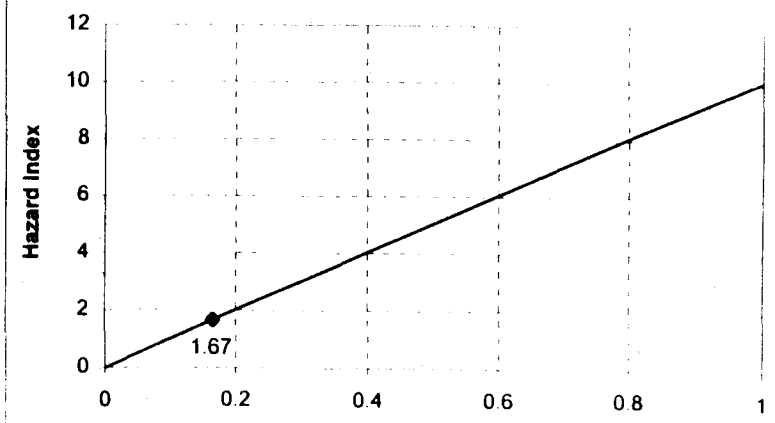
Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



% Contributions of PCOCs to Total Risk

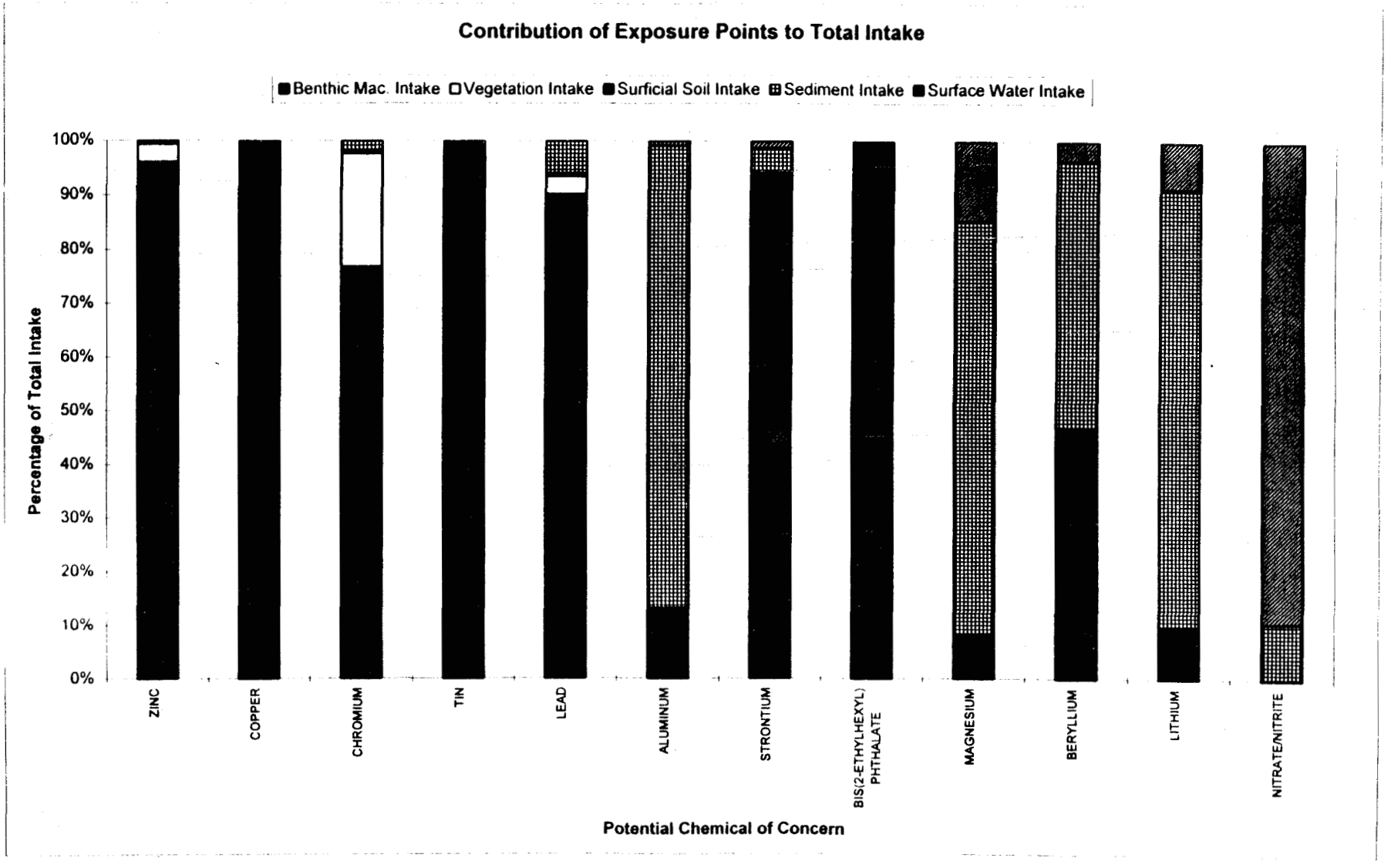


Hazard Index versus Site Use Factor



Site Use Factor for land-based media = 0.019

Summary of Ecotoxicological Risk to Mallar[illegible]n the OU5 C-Ponds Source Area at RFETS



Summary of Ecotoxicological Risk to Malla... in the OU5 C-Ponds Source Area at RFETS

MALLARDS OU5 C-PONDS		EXPOSURE POINT												SUMMARY			
		Benthic Macroinvertebrates			Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU5	IR = 0.039 SUF = 0.165			IR = 0.013 SUF = 0.165			IR = 0.001 SUF = 0.019		IR = 0.001 SUF = 0.165		IR = 0.066 SUF = 0.165					
ZINC	X	406.000		2.613	41.397		0.089	56.700	0.001	94.329	0.016	0.048	4.48E-04	2.718	3.017	0.90	53.90%
COPPER	X	804.000		5.174	8.926		0.019	10.200	1.94E-04	23.083	0.004	0.008	7.37E-05	5.197	15.763	0.33	19.73%
CHROMIUM		13.452		0.087	10.957		0.024	14.800	2.81E-04	14.042	0.002	0.005	4.40E-05	0.113	1.033	0.11	6.55%
TIN		NR	66.240	0.426	NR		—	32.700	0.001	12.061	0.002	0.021	1.98E-04	0.429	4.519	0.09	5.68%
LEAD	X	12.700		0.082	1.355		0.003	26.100	4.96E-04	32.420	0.005	0.006	5.83E-05	0.091	1.802	0.05	3.02%
ALUMINUM		NR	12.739	0.082	NR		—	13000.000	0.247	13018.068	2.148	2.432	0.022	2.499	57.422	0.04	2.60%
STRONTIUM	X	NR	34.882	0.224	NR		—	41.700	0.001	62.795	0.010	0.337	0.003	0.239	6.623	0.04	2.16%
BIS(2-ETHYLHEXYL) PHTHALATE	X	NR	3.100	0.020	NR	ND	—	ND	—	0.640	1.06E-04	0.002	1.85E-05	0.020	0.573	0.03	2.09%
MAGNESIUM		NR	NO BCF	—	NR		—	2860.000	0.054	3157.852	0.521	10.768	0.099	0.675	36.287	0.02	1.11%
BERYLLIUM		NR	0.018	1.19E-04	NR		—	ND	—	0.767	1.27E-04	0.001	9.23E-06	2.54E-04	0.015	0.02	1.01%
LITHIUM	X	NR	NO BCF	—	NR		—	10.700	2.03E-04	10.543	0.002	0.020	1.85E-04	0.002	0.243	0.01	0.49%
NITRATE/NITRITE		NR	NO BCF	—	NR		—	NR	—	3.570	0.001	0.541	0.005	0.006	0.939	0.01	0.38%
COBALT	X	NR	NO BCF	—	NR		—	7.900	1.50E-04	9.581	0.002	0.008	7.34E-05	0.002	0.445	<0.01	0.27%
BARIUM	X	NR	NO BCF	—	NR		—	144.000	0.003	177.770	0.029	0.109	0.001	0.033	9.901	<0.01	0.20%
MERCURY	X	ND		—	ND		—	ND	—	0.393	6.48E-05	1.41E-04	1.30E-06	6.61E-05	0.024	<0.01	0.16%
CADMIUM		ND		—	1.500		0.003	ND	—	0.898	1.48E-04	0.003	2.39E-05	0.003	1.458	<0.01	0.12%
ANTIMONY	X	NR	0.020	1.29E-04	NR		—	ND	—	ND	—	0.015	1.42E-04	2.71E-04	0.132	<0.01	0.12%
MANGANESE		NR	NO BCF	—	NR		—	360.000	0.007	521.405	0.086	0.120	0.001	0.094	49.511	<0.01	0.11%
THALLIUM		NR	ND	—	NR		—	ND	—	0.833	1.38E-04	0.002	2.16E-05	1.59E-04	0.105	<0.01	0.09%
MOLYBDENUM		NR	NO BCF	—	NR		—	ND	—	4.832	0.001	0.017	1.53E-04	0.001	1.478	<0.01	0.04%
SELENIUM		ND		—	ND		—	0.510	9.69E-06	1.353	2.23E-04	0.002	1.71E-05	2.50E-04	0.384	<0.01	0.04%
VANADIUM		NR	NO BCF	—	NR		—	34.700	0.001	33.892	0.006	0.012	1.07E-04	0.006	11.499	<0.01	0.03%
DI n BUTYL PHTHALATE	X	NR	ND	—	NR	ND	—	ND	—	0.110	1.82E-05	ND	—	1.82E-05	0.057	<0.01	0.02%
METHYLENE CHLORIDE	X	NR	0.019	1.24E-04	NR	0.027	5.89E-05	NR	—	0.020	3.28E-06	0.004	3.39E-05	2.20E-04	0.804	<0.01	0.02%
TOLUENE	X	NR	0.070	4.50E-04	NR	0.020	4.39E-05	NR	—	0.146	2.41E-05	0.001	9.24E-06	0.001	4.353	<0.01	0.01%
ARSENIC		NR	0.034	2.19E-04	NR		—	3.500	6.65E-05	4.893	0.001	0.002	2.06E-05	0.001	5.128	<0.01	0.01%
NICKEL		NR	0.890	0.006	NR		—	13.800	2.62E-04	15.645	0.003	0.009	8.02E-05	0.009	68.390	<0.01	0.01%
FLUORANTHENE	X	NR	ND	—	NR	ND	—	0.078	1.48E-06	0.140	2.31E-05	ND	—	2.46E-05	0.363	<0.01	<0.01%
ACETONE		NR	0.006	3.63E-05	NR	0.266	0.001	NR	—	0.124	2.05E-05	0.014	1.34E-04	0.001	85.614	<0.01	<0.01%
PYRENE	X	NR	ND	—	NR	ND	—	0.094	1.79E-06	ND	—	ND	—	1.79E-06	0.363	<0.01	<0.01%
delta-BHC		NR	ND	—	NR	ND	—	ND	—	0.004	5.80E-07	ND	—	5.80E-07	0.287	<0.01	<0.01%
PHENOL	X	NR	ND	—	NR	ND	—	ND	—	0.150	2.48E-05	ND	—	2.48E-05	19.413	<0.01	<0.01%
SILVER	X	ND		—	ND		—	ND	—	1.700	2.81E-04	0.004	3.33E-05	3.14E-04	1078.772	<0.01	<0.01%
1,1,1-TRICHLOROETHANE		NR	ND	—	NR	ND	—	NR	—	0.001	1.70E-07	ND	—	1.70E-07	1.262	<0.01	<0.01%
BUTYL BENZYL PHTHALATE	X	NR	ND	—	NR	ND	—	ND	—	0.057	9.41E-06	ND	—	9.41E-06	105.975	<0.01	<0.01%

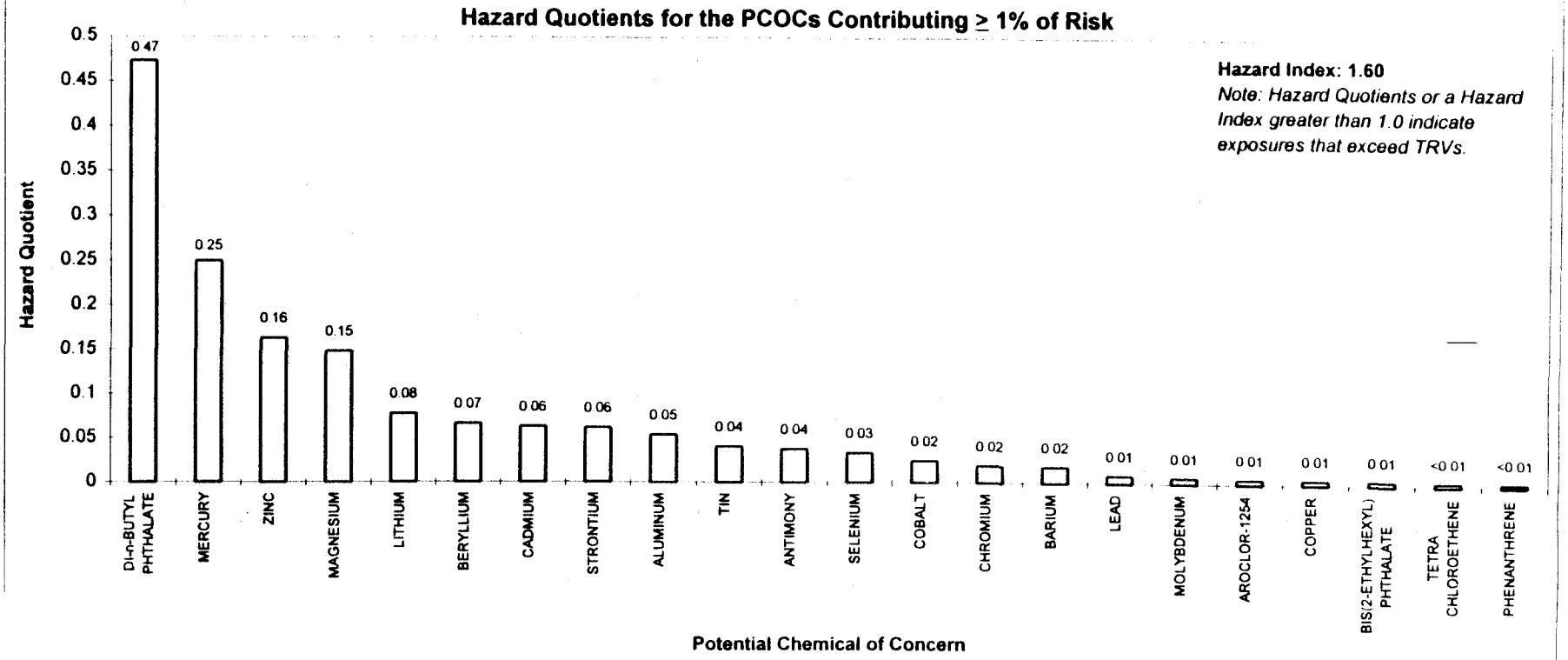
HAZARD INDEX 1.67

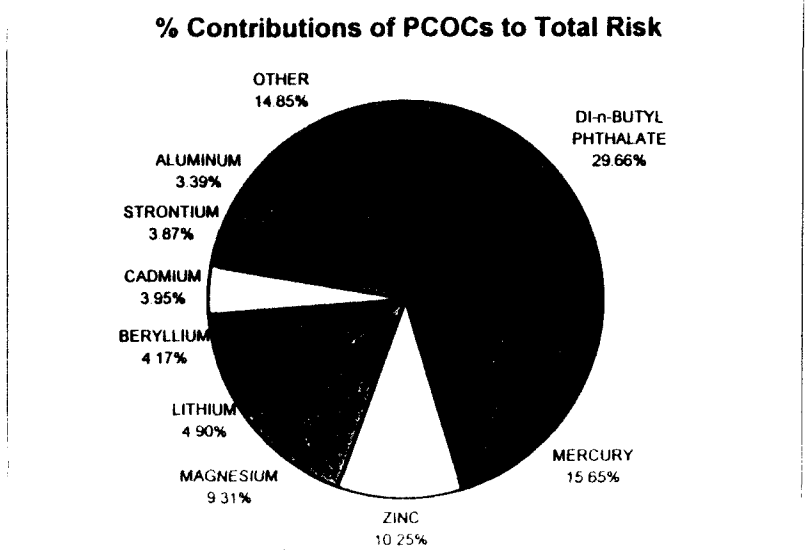
Notes:

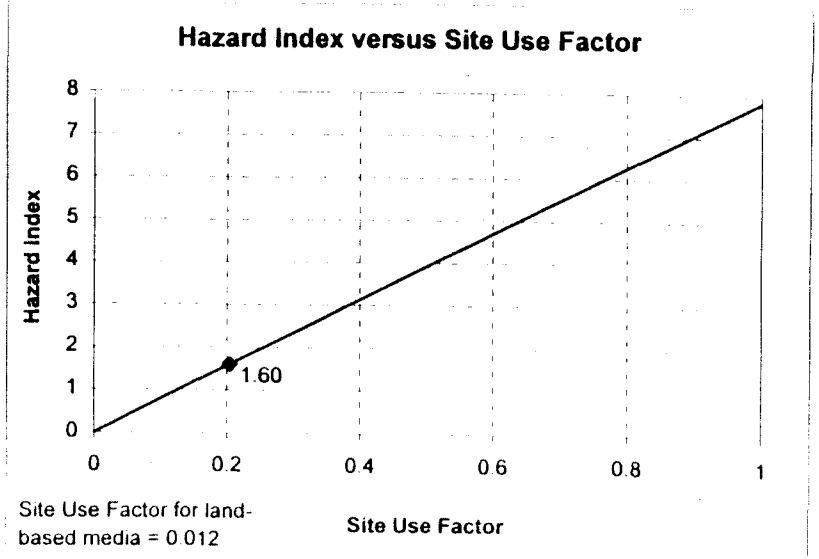
RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available. BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{ow} = No octonol-water partition coefficient available. LOG K_{ow}s are used to estimate vegetation uptake of organic compounds by comp[illegible] the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion r[illegible]g/kg/day, units for concentrations = mg/kg

DRAFT

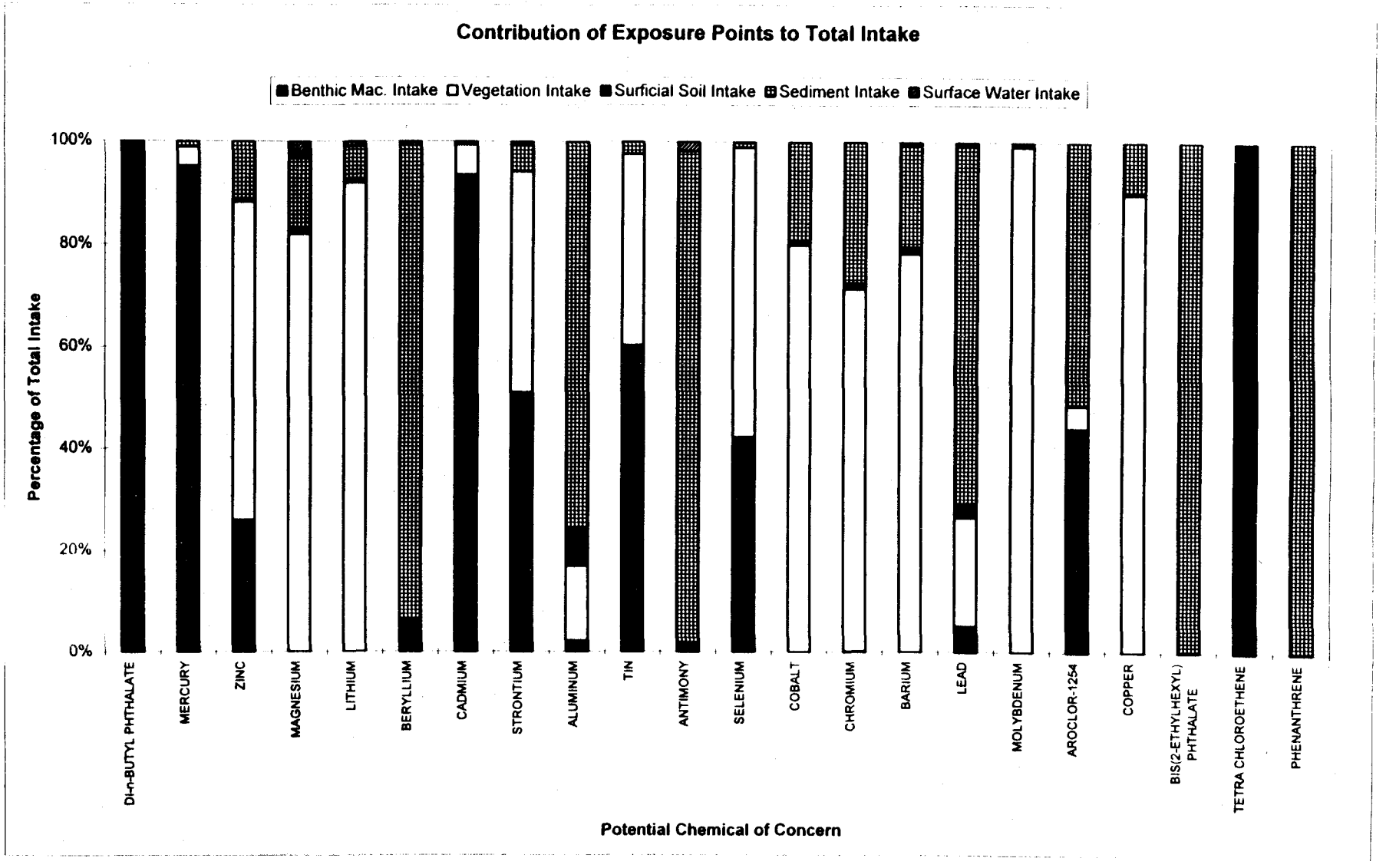
Summary of Ecotoxicological Risk to Mallards in the OU6 B-Ponds Source Area at RFETS







Summary of Ecotoxicological Risk to Mallard in the OU6 B-Ponds Source Area at RFETS



Summary of Ecotoxicological Risk to Mallards in the OU6 B-Ponds Source Area at RFETS

MALLARDS OU6 B-PONDS		EXPOSURE POINT												SUMMARY			
		Benthic Macroinvertebrates			Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU6	IR = 0.039 SUF = 0.204			IR = 0.013 SUF = 0.204			IR = 0.001 SUF = 0.012		IR = 0.001 SUF = 0.204		IR = 0.056 SUF = 0.204					
DI-n-BUTYL PHTHALATE	X	NR	3.416	0.027	NR	NR	—	ND	—	ND	—	0.001	1.14E-05	0.027	0.057	0.47	29.66%
MERCURY	X	NR	0.757	0.006	0.086		2.28E-04	ND	—	0.340	6.93E-05	2.75E-04	3.14E-06	0.006	0.024	0.25	15.65%
ZINC	X	NR	16.116	0.128	116.031		0.308	64.100	0.001	279.259	0.057	0.026	2.98E-04	0.494	3.017	0.16	10.25%
MAGNESIUM	X	NR	NO BCF	—	1669.753		4.428	3790.000	0.045	3643.654	0.743	15.504	0.177	5.394	36.287	0.15	9.31%
LITHIUM		NR	NO BCF	—	6.600		0.018	5.900	7.08E-05	6.200	0.001	0.017	1.98E-04	0.019	0.243	0.08	4.90%
BERYLLIUM		NR	0.004	2.83E-05	ND		—	0.970	1.16E-05	2.933	0.001	1.79E-04	2.04E-06	0.001	0.015	0.07	4.17%
CADMIUM		NR	10.862	0.086	2.034		0.005	ND	—	2.888	0.001	0.001	1.13E-05	0.092	1.458	0.06	3.95%
STRONTIUM	X	NR	26.305	0.209	66.453		0.176	25.500	3.06E-04	101.256	0.021	0.255	0.003	0.409	6.623	0.06	3.87%
ALUMINUM		NR	8.604	0.068	172.535		0.458	18700.000	0.224	11556.246	2.357	0.264	0.003	3.111	57.422	0.05	3.39%
TIN		NR	13.941	0.111	25.800		0.068	ND	—	21.229	0.004	0.006	7.25E-05	0.184	4.519	0.04	2.55%
ANTIMONY	X	NR	0.010	8.17E-05	ND		—	ND	—	25.419	0.005	0.009	9.72E-05	0.005	0.132	0.04	2.37%
SELENIUM		NR	0.703	0.006	2.818		0.007	ND	—	0.591	1.21E-04	0.002	2.31E-05	0.013	0.384	0.03	2.12%
COBALT	X	NR	NO BCF	—	3.300		0.009	9.000	1.08E-04	10.133	0.002	0.002	1.81E-05	0.011	0.445	0.02	1.55%
CHROMIUM	X	NR	0.005	4.13E-05	5.293		0.014	19.900	2.39E-04	26.369	0.005	0.002	2.53E-05	0.020	1.033	0.02	1.21%
BARIUM	X	NR	NO BCF	—	53.768		0.143	194.000	0.002	178.739	0.036	0.051	0.001	0.182	9.901	0.02	1.15%
LEAD	X	NR	0.102	0.001	1.274		0.003	37.200	4.46E-04	54.428	0.011	0.005	5.85E-05	0.016	1.802	0.01	0.56%
MOLYBDENUM	X	NR	NO BCF	—	3.800		0.010	ND	—	ND	—	0.007	8.40E-05	0.010	1.478	0.01	0.42%
AROCLOR-1254	X	0.034		2.71E-04	0.010		2.71E-05	ND	—	1.543	3.15E-04	NR	—	0.001	0.172	0.01	0.36%
COPPER	X	NR	ND	—	29.452		0.078	17.000	2.04E-04	42.045	0.009	ND	—	0.087	15.763	0.01	0.35%
BIS(2 ETHYLHEXYL) PHTHALATE	X	NR	ND	—	NR	NR	—	ND	—	12.825	0.003	ND	—	0.003	0.573	0.01	0.33%
TETRA CHLOROETHENE	X	NR	0.826	0.007	NR	ND	—	NR	—	ND	—	0.004	4.18E-05	0.007	1.570	<0.01	0.28%
PHENANTHRENE	X	NR	ND	—	NR	NR	—	ND	—	0.744	1.52E-04	ND	—	1.52E-04	0.036	<0.01	0.26%
MANGANESE	X	NR	NO BCF	—	53.948		0.143	321.000	0.004	272.520	0.056	0.098	0.001	0.204	49.511	<0.01	0.26%
BENZO(k)FLUORANTHENE	X	NR	ND	—	NR	NR	—	ND	—	0.411	8.38E-05	ND	—	8.38E-05	0.036	<0.01	0.15%
ANTHRACENE	X	NR	ND	—	NR	NR	—	ND	—	0.326	6.65E-05	ND	—	6.65E-05	0.029	<0.01	0.14%
BENZO(a)PYRENE	X	NR	ND	—	NR	NR	—	ND	—	0.398	8.13E-05	ND	—	8.13E-05	0.036	<0.01	0.14%
ARSENIC	X	NR	0.038	3.01E-04	2.700		0.007	5.100	6.12E-05	6.286	0.001	0.002	2.57E-05	0.009	5.128	<0.01	0.11%
THALLIUM		NR	ND	—	ND		—	0.230	2.76E-06	0.790	1.61E-04	ND	—	1.64E-04	0.105	<0.01	0.10%
VANADIUM	X	NR	NO BCF	—	1.200		0.003	38.900	4.67E-04	32.781	0.007	0.003	3.26E-05	0.010	11.499	<0.01	0.05%
DIBENZO(a,h)ANTHRACENE	X	NR	ND	—	NR	NR	—	ND	—	0.150	3.06E-05	ND	—	3.06E-05	0.036	<0.01	0.05%
TRICHLOROETHENE	X	NR	0.117	0.001	NR	ND	—	NR	—	ND	—	0.003	3.29E-05	0.001	1.244	<0.01	0.05%
INDENO(1,2,3-cd)PYRENE	X	NR	ND	—	NR	NR	—	ND	—	0.350	7.13E-05	ND	—	7.13E-05	0.091	<0.01	0.05%
NICKEL	X	NR	0.640	0.005	13.890		0.037	14.600	1.75E-04	19.763	0.004	0.004	4.06E-05	0.046	68.390	<0.01	0.04%
FLUORANTHENE	X	NR	ND	—	NR	NR	—	ND	—	1.128	2.30E-04	ND	—	2.30E-04	0.363	<0.01	0.04%
PYRENE	X	NR	ND	—	NR	NR	—	ND	—	0.951	1.94E-04	ND	—	1.94E-04	0.363	<0.01	0.03%
BENZO(b)FLUORANTHENE	X	NR	ND	—	NR	NR	—	ND	—	0.854	1.74E-04	ND	—	1.74E-04	0.362	<0.01	0.03%
CHRYSENE	X	NR	ND	—	NR	NR	—	ND	—	0.614	1.25E-04	ND	—	1.25E-04	0.363	<0.01	0.02%
BENZO(a)ANTHRACENE	X	NR	ND	—	NR	NR	—	ND	—	0.429	8.75E-05	ND	—	8.75E-05	0.363	<0.01	0.02%
FLUORENE	X	NR	ND	—	NR	NR	—	ND	—	0.351	7.16E-05	ND	—	7.16E-05	0.362	<0.01	0.01%
AROCLOR-1248		ND		—	ND		—	ND	—	0.165	3.37E-05	NR	—	3.37E-05	0.172	<0.01	0.01%
BENZO(ghi)PERYLENE	X	NR	ND	—	NR	NR	—	ND	—	0.270	5.51E-05	ND	—	5.51E-05	0.363	<0.01	0.01%
AROCLOR-1260	X	0.006		5.06E-05	ND		—	ND	—	0.166	3.38E-05	NR	—	8.44E-05	0.860	<0.01	0.01%
HEPTACHLOR	X	NR	NR	—	NR	NR	—	ND	—	0.007	1.38E-06	NR	—	1.38E-06	0.032	<0.01	<0.01%
SILVER	X	NR	ND	—	4.700		0.012	ND	—	92.067	0.019	ND	—	0.031	1078.772	<0.01	<0.01%
TOLUENE	X	NR	ND	—	NR	0.020	5.43E-05	NR	—	0.278	5.68E-05	ND	—	1.11E-04	4.353	<0.01	<0.01%
1,2-DICHLOROETHANE	X	NR	0.008	6.25E-05	NR	ND	—	NR	—	ND	—	0.001	1.14E-05	7.39E-05	19.169	<0.01	<0.01%

Summary of Ecotoxicological Risk to Mallards in the OU6 B-Ponds Source Area at RFETS

MALLARDS OU6 B-PONDS		EXPOSURE POINT												SUMMARY			
		Benthic Macroinvertebrates			Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU6	IR = 0.039 SUF = 0.204			IR = 0.013 SUF = 0.204			IR = 0.001 SUF = 0.012		IR = 0.001 SUF = 0.204		IR = 0.056 SUF = 0.204					
PHENOL	X	NR	ND	—	NR	NR	—	ND	—	0.290	5.92E-05	ND	—	5.92E-05	19.413	<0.01	<0.01%
METHYLENE CHLORIDE	X	NR	ND	—	NR	ND	—	NR	—	0.009	1.84E-06	ND	—	1.84E-06	0.804	<0.01	<0.01%
ACETONE	X	NR	0.004	3.28E-05	NR	ND	—	NR	—	0.190	3.87E-05	0.011	1.21E-04	1.92E-04	85.614	<0.01	<0.01%
NAPHTHALENE	X	NR	ND	—	NR	NR	—	ND	—	0.351	7.16E-05	ND	—	7.16E-05	36.331	<0.01	<0.01%
ACENAPHTHENE	X	NR	ND	—	NR	NR	—	ND	—	0.341	6.96E-05	ND	—	6.96E-05	36.331	<0.01	<0.01%
DI-n-OCTYL PHTHALATE	X	NR	ND	—	NR	NR	—	ND	—	0.250	5.10E-05	ND	—	5.10E-05	46.363	<0.01	<0.01%
2-METHYLNAPHTHALENE	X	NR	ND	—	NR	NR	—	ND	—	0.170	3.47E-05	ND	—	3.47E-05	36.331	<0.01	<0.01%
gamma-BHC (LINDANE)	X	NR	NR	—	NR	NR	—	ND	—	0.006	1.18E-06	NR	—	1.18E-06	2.000	<0.01	<0.01%
BUTYL BENZYL PHTHALATE	X	NR	ND	—	NR	NR	—	ND	—	0.110	2.24E-05	ND	—	2.24E-05	105.975	<0.01	<0.01%

HAZARD INDEX 1.60

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available. BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octanol-water partition coefficient available. LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octanol (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mallards in the OU5 Old Landfill Source Area at RFETS

MALLARDS OU5 OLD LANDFILL		EXPOSURE POINT												SUMMARY			
		Benthic Macroinvertebrates			Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU5	IR = 0.039 SUF = 0.081			IR = 0.013 SUF = 0.081			IR = 0.001 SUF = 0.023		IR = 0.001 SUF = 0.081		IR = 0.056 SUF = 0.081					
ZINC	X	219.000		0.692	44.205		0.047	66.571	0.002	634.180	0.051	0.022	1.01E-04	0.791	3.017	0.26	37.27%
MAGNESIUM		NR	NO BCF	—	2448.896		2.579	2298.534	0.053	4628.783	0.375	19.837	0.090	3.096	36.287	0.09	12.13%
TIN		NR	77.147	0.244	2.100		0.002	9.714	2.23E-04	ND	—	0.021	9.53E-05	0.246	4.519	0.05	7.74%
STRONTIUM	X	NR	48.619	0.154	79.000		0.083	30.813	0.001	79.000	0.006	0.484	0.002	0.246	6.623	0.04	5.28%
ANTIMONY	X	NR	0.018	5.73E-05	ND		—	8.677	2.00E-04	51.300	0.004	0.015	6.88E-05	0.004	0.132	0.03	4.31%
ALUMINUM		NR	9.830	0.031	199.127		0.210	11074.656	0.255	16076.395	1.302	1.471	0.007	1.804	57.422	0.03	4.47%
COPPER	X	122.000		0.385	7.863		0.008	37.703	0.001	108.217	0.009	0.006	2.57E-05	0.403	15.763	0.03	3.63%
PHENANTHRENE	X	NR	ND	—	NR	0.610	0.001	9.640	2.22E-04	0.082	6.64E-06	ND	—	0.001	0.036	0.03	3.95%
CHROMIUM		5.600		0.018	3.600		0.004	13.088	3.01E-04	22.917	0.002	0.004	1.94E-05	0.024	1.033	0.02	3.30%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	3.100	0.010	NR	0.023	2.43E-05	0.210	4.83E-06	0.068	5.51E-06	0.002	9.07E-06	0.010	0.573	0.02	2.48%
BERYLLIUM		NR	0.017	5.36E-05	ND		—	0.882	2.03E-05	1.700	1.38E-04	0.001	4.30E-06	2.16E-04	0.015	0.01	2.05%
LEAD	X	5.200		0.016	1.683		0.002	28.695	0.001	37.926	0.003	0.004	1.82E-05	0.022	1.802	0.01	1.74%
ANTHRACENE	X	NR	ND	—	NR	0.243	2.56E-04	2.816	6.48E-05	ND	—	ND	—	3.21E-04	0.029	0.01	1.57%
LITHIUM	X	NR	NO BCF	—	1.100		0.001	8.005	1.84E-04	15.400	0.001	0.013	5.84E-05	0.003	0.243	0.01	1.75%
MERCURY	X	ND		—	ND		—	0.124	2.85E-06	3.194	2.59E-04	0.000	5.00E-07	2.62E-04	0.024	0.01	1.55%
BARIUM	X	NR	NO BCF	—	66.461		0.070	115.593	0.003	186.000	0.015	0.162	0.001	0.088	9.901	0.01	1.26%
NITRATE/NITRITE		NR	NO BCF	—	NR		—	NR	—	6.526	0.001	1.490	0.007	0.007	0.939	0.01	1.06%
MOLYBDENUM		NR	NO BCF	—	8.700		0.009	4.400	1.01E-04	3.900	3.16E-04	0.004	2.00E-05	0.010	1.478	0.01	0.96%
SELENIUM		ND		—	1.400		0.001	0.459	1.06E-05	ND	—	0.003	1.14E-05	0.001	0.384	<0.01	0.37%
PENTACHLOROPHENOL	X	NR	18.905	0.060	NR	0.008	8.29E-06	ND	—	ND	—	0.005	2.27E-05	0.060	16.920	<0.01	0.50%
BENZO(a)PYRENE	X	NR	ND	—	NR	0.030	3.18E-05	2.636	6.06E-05	ND	—	ND	—	9.24E-05	0.036	<0.01	0.36%
COBALT	X	NR	NO BCF	—	ND		—	8.348	1.92E-04	10.900	0.001	0.002	9.07E-06	0.001	0.445	<0.01	0.32%
MANGANESE		NR	NO BCF	—	47.237		0.050	277.661	0.006	556.331	0.045	0.061	2.79E-04	0.101	49.511	<0.01	0.29%
CADMIUM		ND		—	1.900		0.002	0.880	2.03E-05	2.486	2.01E-04	0.002	7.26E-06	0.002	1.458	<0.01	0.19%
BENZO(k)FLUORANTHENE	X	NR	ND	—	NR	0.005	5.00E-06	1.694	3.90E-05	ND	—	ND	—	4.40E-05	0.036	<0.01	0.17%
FLUORANTHENE	X	NR	ND	—	NR	0.208	2.19E-04	8.267	1.90E-04	0.097	7.86E-06	ND	—	4.17E-04	0.363	<0.01	0.16%
PYRENE	X	NR	ND	—	NR	0.201	2.12E-04	7.090	1.63E-04	0.097	7.86E-06	ND	—	3.83E-04	0.363	<0.01	0.15%
FLUORENE	X	NR	ND	—	NR	0.268	2.82E-04	2.363	5.44E-05	ND	—	ND	—	3.37E-04	0.362	<0.01	0.13%
INDENO(1,2,3-cd)PYRENE	X	NR	ND	—	NR	0.001	1.26E-06	2.572	5.92E-05	ND	—	ND	—	6.04E-05	0.091	<0.01	0.09%
THALLIUM		NR	ND	—	ND		—	0.310	7.13E-06	0.600	4.86E-05	0.002	8.99E-06	6.47E-05	0.105	<0.01	0.09%
DIBENZO(a,h)ANTHRACENE	X	NR	ND	—	NR	0.003	3.28E-06	0.758	1.74E-05	ND	—	ND	—	2.07E-05	0.036	<0.01	0.08%
DI-n-BUTYL PHTHALATE	X	NR	ND	—	NR	0.027	2.79E-05	0.200	4.60E-06	ND	—	ND	—	3.25E-05	0.057	<0.01	0.08%
4,4'-DDT	X	NR	ND	—	NR	ND	—	0.009	2.00E-07	ND	—	ND	—	2.00E-07	4.03E-04	<0.01	0.07%
VANADIUM		NR	NO BCF	—	1.400		0.001	30.425	0.001	39.300	0.003	0.008	3.71E-05	0.005	11.499	<0.01	0.06%
HEPTACHLOR EPOXIDE	X	NR	ND	—	NR	0.001	1.36E-06	0.004	1.00E-07	ND	—	ND	—	1.46E-06	0.004	<0.01	0.05%
CHRYSENE	X	NR	ND	—	NR	0.061	6.39E-05	2.987	6.87E-05	0.041	3.32E-06	ND	—	1.36E-04	0.363	<0.01	0.05%
TRICHLOROETHENE		NR	0.117	3.69E-04	NR	0.019	1.97E-05	ND	—	ND	—	0.003	1.30E-05	4.01E-04	1.244	<0.01	0.05%
BENZO(a)ANTHRACENE	X	NR	ND	—	NR	0.038	3.99E-05	2.850	6.56E-05	0.038	3.08E-06	ND	—	1.09E-04	0.363	<0.01	0.04%
ARSENIC		NR	0.039	1.22E-04	0.590		0.001	5.702	1.31E-04	6.100	4.94E-04	0.002	9.71E-06	0.001	5.128	<0.01	0.03%
BENZO(b)FLUORANTHENE	X	NR	ND	—	NR	0.016	1.66E-05	3.179	7.31E-05	ND	—	ND	—	8.97E-05	0.362	<0.01	0.04%
AROCLOR-1254	X	NR	ND	—	NR	0.001	1.53E-06	0.572	1.32E-05	0.250	2.03E-05	ND	—	3.49E-05	0.172	<0.01	0.03%
NICKEL		NR	0.904	0.003	8.000		0.008	14.939	3.44E-04	21.300	0.002	0.009	4.28E-05	0.013	68.390	<0.01	0.03%
METHYLENE CHLORIDE	X	NR	0.016	5.08E-05	NR	0.042	4.37E-05	ND	—	ND	—	0.003	1.39E-05	1.08E-04	0.804	<0.01	0.02%
BENZO(ghi)PERYLENE	X	NR	ND	—	NR	0.002	2.44E-06	0.922	2.12E-05	ND	—	ND	—	2.37E-05	0.363	<0.01	0.01%
PHENOL	X	NR	ND	—	NR	0.777	0.001	ND	—	ND	—	ND	—	0.001	19.413	<0.01	0.01%
NAPHTHALENE	X	NR	ND	—	NR	1.297	0.001	2.498	5.75E-05	ND	—	ND	—	0.001	36.331	<0.01	<0.01%
ACETONE		NR	0.009	2.74E-05	NR	1.397	0.001	ND	—	0.046	3.73E-06	0.022	1.01E-04	0.002	85.614	<0.01	<0.01%
ACENAPHTHENE	X	NR	ND	—	NR	0.258	2.72E-04	2.636	6.06E-05	ND	—	ND	—	3.32E-04	36.331	<0.01	<0.01%

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Summary of Ecotoxicological Risk to Mallards in the OU5 Old Landfill Source Area at RFETS

MALLARDS OU5 OLD LANDFILL		EXPOSURE POINT												SUMMARY			
		Benthic Macroinvertebrates			Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU5	IR = 0.039 SUF = 0.081			IR = 0.013 SUF = 0.081			IR = 0.001 SUF = 0.023		IR = 0.001 SUF = 0.081		IR = 0.056 SUF = 0.081					
TETRACHLOROETHENE		NR	ND	—	NR	0.013	1.36E-05	ND	—	0.001	8.00E-08	ND	—	1.37E-05	1.570	<0.01	<0.01%
TOLUENE	X	NR	ND	—	NR	0.027	2.80E-05	ND	—	ND	—	ND	—	2.80E-05	4.353	<0.01	<0.01%
2-METHYLNAPHTHALENE	X	NR	ND	—	NR	0.141	1.49E-04	0.944	2.17E-05	ND	—	ND	—	1.70E-04	36.331	<0.01	<0.01%
DIELDRIN	X	NR	ND	—	NR	ND	—	0.009	2.10E-07	ND	—	ND	—	2.10E-07	0.057	<0.01	<0.01%
1,1,1-TRICHLOROETHANE		NR	ND	—	NR	0.003	3.05E-06	ND	—	ND	—	ND	—	3.05E-06	1.262	<0.01	<0.01%
ALDRIN	X	NR	ND	—	NR	ND	—	0.005	1.10E-07	ND	—	ND	—	1.10E-07	0.057	<0.01	<0.01%
SILVER	X	ND		—	1.000		0.001	7.180	1.65E-04	6.597	0.001	0.003	1.58E-05	0.002	1078.772	<0.01	<0.01%
AROCLOR-1260		NR	ND	—	NR	0.001	6.60E-07	ND	—	ND	—	ND	—	6.60E-07	0.860	<0.01	<0.01%
BUTYL BENZYL PHTHALATE	X	NR	ND	—	NR	0.024	2.53E-05	0.220	5.06E-06	ND	—	ND	—	3.04E-05	105.975	<0.01	<0.01%
DI-n-OCTYL PHTHALATE	X	NR	ND	—	NR	ND	—	0.083	1.91E-06	ND	—	ND	—	1.91E-06	46.363	<0.01	<0.01%
TOTAL XYLENES		NR	ND	—	NR	0.003	3.43E-06	ND	—	ND	—	ND	—	3.43E-06	114.839	<0.01	<0.01%

HAZARD INDEX 0.70

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available. BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available. LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mallards in the OU2 903 Pad Source Area at RFETS

MALLARDS OU2 903 PAD		EXPOSURE POINT												SUMMARY			
		Benthic Macroinvertebrates			Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU2	IR = 0.039 SUF = 0.014			IR = 0.013 SUF = 0.014			IR = 0.001 SUF = 0.048		IR = 0.001 SUF = 0.014		IR = 0.056 SUF = 0.014					
AROCLOR-1254	X	NR	96.315	0.053	NR	0.033	6.05E-06	0.208	1.00E-05	0.260	3.64E-06	0.002	1.47E-06	0.053	0.172	0.31	61.27%
DI-n-BUTYL PHTHALATE	X	NR	6.832	0.004	NR	0.061	1.11E-05	0.353	1.70E-05	0.065	9.10E-07	0.002	1.57E-06	0.004	0.057	0.07	13.95%
TIN		NR	119.444	0.065	3.500		0.001	33.323	0.002	18.800	2.63E-04	0.053	4.14E-05	0.068	4.519	0.02	2.99%
ALUMINUM		NR	56.849	0.031	297.170		0.054	11886.180	0.571	14104.468	0.197	5.480	0.004	0.857	57.422	0.01	2.97%
MAGNESIUM		NR	NO BCF	—	1426.036		0.260	3426.354	0.164	4179.821	0.059	39.934	0.031	0.514	36.287	0.01	2.82%
MERCURY		NR	0.477	2.61E-04	0.098		1.78E-05	0.060	2.88E-06	0.040	5.60E-07	0.000	9.00E-08	2.82E-04	0.024	0.01	2.34%
STRONTIUM		NR	96.028	0.052	46.852		0.009	43.040	0.002	97.592	0.001	1.028	0.001	0.065	6.623	0.01	1.95%
ZINC		NR	26.227	0.014	29.152		0.005	72.699	0.003	109.953	0.002	0.227	1.78E-04	0.025	3.017	0.01	1.65%
CADMIUM		NR	16.120	0.009	2.100		3.82E-04	0.920	4.42E-05	0.950	1.33E-05	0.002	1.80E-06	0.009	1.458	0.01	1.23%
BERYLLIUM		NR	0.013	7.26E-06	ND		—	1.200	5.76E-05	0.903	1.26E-05	0.001	9.90E-07	7.85E-05	0.015	0.01	1.04%
SELENIUM		NR	2.306	0.001	2.288		4.16E-04	0.620	2.98E-05	0.880	1.23E-05	0.008	6.38E-06	0.002	0.384	0.01	1.04%
LITHIUM		NR	NO BCF	—	1.100		2.00E-04	13.592	0.001	12.183	1.71E-04	0.071	5.54E-05	0.001	0.243	0.00	0.82%
PHENANTHRENE	X	NR	ND	—	NR	0.716	1.30E-04	0.556	2.67E-05	0.190	2.66E-06	ND	—	1.60E-04	0.036	0.00	0.88%
ANTIMONY		NR	0.022	1.17E-05	ND		—	9.800	4.70E-04	4.900	6.86E-05	0.020	1.55E-05	0.001	0.132	0.01	1.51%
CHROMIUM	X	NR	0.020	1.10E-05	5.509		0.001	26.789	0.001	14.581	2.04E-04	0.011	8.91E-06	0.003	1.033	<0.01	0.58%
BARIUM		NR	NO BCF	—	59.791		0.011	143.681	0.007	164.776	0.002	0.261	2.05E-04	0.020	9.901	<0.01	0.40%
COBALT		NR	NO BCF	—	0.830		1.51E-04	7.671	3.68E-04	9.088	1.27E-04	0.011	8.23E-06	0.001	0.445	<0.01	0.45%
LEAD	X	NR	0.277	1.51E-04	1.789		3.26E-04	32.367	0.002	32.749	4.58E-04	0.007	5.21E-06	0.002	1.802	<0.01	0.22%
METHYLENE CHLORIDE		NR	0.019	1.07E-05	NR	5.553	0.001	NR	—	0.009	1.30E-07	0.004	2.91E-06	0.001	0.804	<0.01	0.25%
MANGANESE		NR	NO BCF	—	169.997		0.031	318.236	0.015	236.041	0.003	0.312	2.44E-04	0.050	49.511	<0.01	0.20%
NITRATE/NITRITE		NR	NO BCF	—	NR		—	3.106	1.49E-04	4.124	5.77E-05	0.793	0.001	0.001	0.939	<0.01	0.21%
MOLYBDENUM		NR	NO BCF	—	5.700		0.001	3.000	1.44E-04	6.700	9.38E-05	0.016	1.22E-05	0.001	1.478	<0.01	0.13%
TOLUENE		NR	ND	—	NR	18.926	0.003	NR	—	0.002	3.00E-08	ND	—	0.003	4.353	<0.01	0.14%
TETRACHLOROETHENE		NR	1.420	0.001	NR	0.035	6.44E-06	NR	—	ND	—	0.006	4.93E-06	0.001	1.570	<0.01	0.13%
BENZO(a)PYRENE	X	NR	ND	—	NR	0.005	8.40E-07	0.320	1.54E-05	0.110	1.54E-06	ND	—	1.78E-05	0.036	<0.01	0.10%
BENZO(k)FLUORANTHENE	X	NR	ND	—	NR	ND	—	0.311	1.49E-05	0.110	1.54E-06	ND	—	1.65E-05	0.036	<0.01	0.09%
ANTHRACENE		NR	ND	—	NR	0.009	1.72E-06	0.201	9.63E-06	ND	—	ND	—	1.14E-05	0.029	<0.01	0.08%
TRICHLOROETHENE		NR	0.498	2.72E-04	NR	0.937	1.71E-04	NR	—	ND	—	0.012	9.59E-06	4.52E-04	1.244	<0.01	0.07%
THALLIUM		NR	ND	—	ND		—	0.430	2.06E-05	1.000	1.40E-05	ND	—	3.46E-05	0.105	<0.01	0.07%
COPPER		NR	2.264	0.001	10.420		0.002	21.815	0.001	23.031	3.22E-04	0.024	1.89E-05	0.005	15.763	<0.01	0.06%
PYRENE	X	NR	ND	—	NR	0.339	6.18E-05	0.644	3.09E-05	0.260	3.64E-06	ND	—	9.63E-05	0.363	<0.01	0.05%
FLUORANTHENE	X	NR	ND	—	NR	0.284	5.17E-05	0.689	3.31E-05	0.230	3.22E-06	ND	—	8.80E-05	0.363	<0.01	0.05%
VANADIUM		NR	NO BCF	—	2.400		4.37E-04	35.681	0.002	37.422	0.001	0.026	2.07E-05	0.003	11.499	<0.01	0.05%
4,4'-DDT	X	NR	ND	—	NR	ND	—	ND	—	0.006	8.00E-08	ND	—	8.00E-08	0.000	<0.01	0.04%
ACETONE		NR	0.005	2.80E-06	NR	73.447	0.013	NR	—	0.066	9.20E-07	0.013	1.03E-05	0.013	85.614	<0.01	0.03%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	ND	—	NR	0.358	6.51E-05	0.248	1.19E-05	0.540	7.56E-06	ND	—	8.46E-05	0.573	<0.01	0.03%
DIBENZO(a,h)ANTHRACENE		NR	ND	—	NR	ND	—	0.092	4.42E-06	ND	—	ND	—	4.42E-06	0.036	<0.01	0.02%
INDENO(1,2,3-cd)PYRENE	X	NR	ND	—	NR	ND	—	0.188	9.02E-06	ND	—	ND	—	9.02E-06	0.091	<0.01	0.02%
AROCLOR-1248		NR	ND	—	NR	0.027	4.94E-06	0.211	1.01E-05	ND	—	ND	—	1.51E-05	0.172	<0.01	0.02%
ARSENIC		NR	0.050	2.71E-05	ND		—	3.998	1.92E-04	5.742	8.04E-05	0.006	4.34E-06	3.04E-04	5.128	<0.01	0.01%
CHRYSENE	X	NR	ND	—	NR	0.007	1.21E-06	0.341	1.64E-05	0.140	1.96E-06	ND	—	1.95E-05	0.363	<0.01	0.01%
BENZO(a)ANTHRACENE	X	NR	ND	—	NR	0.004	6.90E-07	0.334	1.60E-05	0.110	1.54E-06	ND	—	1.83E-05	0.363	<0.01	0.01%
BENZO(b)FLUORANTHENE	X	NR	ND	—	NR	0.001	2.60E-07	0.337	1.62E-05	0.120	1.68E-06	ND	—	1.81E-05	0.362	<0.01	0.01%
NICKEL		NR	1.202	0.001	4.400		0.001	26.987	0.001	17.615	2.47E-04	0.014	1.11E-05	0.003	68.390	<0.01	0.01%
BENZO(ghi)PERYLENE	X	NR	ND	—	NR	ND	—	0.191	9.17E-06	ND	—	ND	—	9.17E-06	0.363	<0.01	0.01%
FLUORENE		NR	ND	—	NR	ND	—	0.190	9.11E-06	ND	—	ND	—	9.11E-06	0.362	<0.01	0.01%
1,1,1-TRICHLOROETHANE		NR	ND	—	NR	0.014	2.63E-06	NR	—	ND	—	ND	—	2.63E-06	1.262	<0.01	<0.01%
SILVER		NR	0.815	4.45E-04	1.300		2.37E-04	ND	—	1.700	2.38E-05	0.005	3.53E-06	0.001	1078.772	<0.01	<0.01%

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Summary of Ecotoxicological Risk to Malla. .. in the OU2 903 Pad Source Area at RFETS

MALLARDS OU2 903 PAD		EXPOSURE POINT												SUMMARY			
		Benthic Macroinvertebrates			Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU2	IR = 0.039 SUF = 0.014			IR = 0.013 SUF = 0.014			IR = 0.001 SUF = 0.048		IR = 0.001 SUF = 0.014		IR = 0.056 SUF = 0.014					
ACENAPHTHENE		NR	ND	—	NR	0.010	1.82E-06	0.186	8.94E-06	ND	—	ND	—	1.08E-05	36.331	<0.01	<0.01%
TOTAL XYLENES		NR	ND	—	NR	0.049	8.87E-06	NR	—	ND	—	ND	—	8.87E-06	114.839	<0.01	<0.01%
BUTYL BENZYL PHTHALATE		NR	ND	—	NR	0.035	6.33E-06	ND	—	ND	—	ND	—	6.33E-06	105.975	<0.01	<0.01%
DI-n-OCTYL PHTHALATE		NR	ND	—	NR	1.40E-05	—	ND	—	0.210	2.94E-06	ND	—	2.94E-06	46.363	<0.01	<0.01%
gamma-BHC (LINDANE)		NR	ND	—	NR	ND	—	ND	—	0.004	6.00E-08	ND	—	6.00E-08	2.000	<0.01	<0.01%

HAZARD INDEX 0.50

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Con entration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mallards in the OU1 881 Hillside Source Area at RFETS

MALLARD OU1 881 HILLSIDE		EXPOSURE POINT												SUMMARY			
		Benthic Macroinvertebrates			Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU1	IR = 0.038 SUF = 0.032			IR = 0.013 SUF = 0.032			IR = 0.001 SUF = 0.039		IR = 0.001 SUF = 0.032		IR = 0.056 SUF = 0.032					
PHENANTHRENE	X	NR	ND	—	NR	4.472	0.002	0.559	2.18E-05	0.190	6.08E-06	ND	—	0.002	0.036	0.06	21.33%
MERCURY		NR	0.469	0.001	ND		—	0.054	2.10E-06	ND	—	1.18E-04	2.10E-07	0.001	0.024	0.04	16.00%
STRONTIUM		NR	100.662	0.126	NR		—	61.651	0.002	121.257	0.004	0.413	0.001	0.133	6.623	0.02	7.71%
TIN		NR	67.886	0.085	NR		—	43.094	0.002	ND	—	0.024	4.26E-05	0.086	4.519	0.02	7.31%
ALUMINUM		NR	14.717	0.018	NR		—	14308.320	0.558	15760.019	0.504	0.926	0.002	1.082	57.422	0.02	7.23%
CADMIUM		NR	19.096	0.024	1.409		0.001	0.611	2.38E-05	0.827	2.65E-05	0.002	2.88E-06	0.024	1.458	0.02	6.32%
ZINC		NR	14.991	0.019	28.068		0.012	85.548	0.003	186.114	0.006	0.051	9.07E-05	0.040	3.017	0.01	5.09%
MAGNESIUM		NR	NO BCF	—	NR		—	3418.568	0.133	5670.202	0.181	13.583	0.024	0.339	36.287	0.01	3.59%
BIS(2-ETHYLHEXYL)PHTHALATE		NR	3.100	0.004	NR	3.395	0.001	ND	—	0.280	8.96E-06	0.002	3.58E-06	0.005	0.573	0.01	3.35%
METHYLENE CHLORIDE		NR	0.020	2.48E-05	NR	14.721	0.006	NR	—	ND	—	0.004	6.78E-06	0.006	0.804	0.01	2.87%
BERYLLIUM		NR	0.020	2.49E-05	NR		—	1.257	4.90E-05	0.809	2.59E-05	0.001	1.63E-06	1.01E-04	0.015	0.01	2.60%
NITRATE/NITRITE		NR	NO BCF	—	NR		—	2.111	8.23E-05	6.793	2.17E-04	2.624	0.005	0.005	0.939	0.01	2.04%
SELENIUM		NR	0.660	0.001	1.500		0.001	0.511	1.99E-05	0.919	2.94E-05	0.002	3.50E-06	0.002	0.384	0.01	2.00%
TOLUENE	X	NR	0.184	2.30E-04	NR	43.577	0.018	NR	—	0.005	1.60E-07	0.003	4.72E-06	0.018	4.353	<0.01	1.59%
LITHIUM		NR	NO BCF	—	NR		—	9.473	3.69E-04	10.000	3.20E-04	0.021	3.67E-05	0.001	0.243	<0.01	1.58%
CHROMIUM		NR	0.013	1.67E-05	5.535		0.002	34.997	0.001	23.900	0.001	0.004	7.08E-06	0.004	1.033	<0.01	1.49%
PYRENE	X	NR	ND	—	NR	2.156	0.001	0.693	2.70E-05	0.310	9.92E-06	ND	—	0.001	0.363	<0.01	1.06%
FLUORANTHENE	X	NR	ND	—	NR	1.763	0.001	0.762	2.97E-05	0.380	1.22E-05	ND	—	0.001	0.363	<0.01	1.06%
COBALT		NR	NO BCF	—	NR		—	8.343	3.25E-04	11.094	3.55E-04	0.007	1.17E-05	0.001	0.445	<0.01	0.86%
ALDRIN		NR	0.092	1.15E-04	NR	ND	—	ND	—	ND	—	1.00E-05	2.00E-08	1.15E-04	0.057	<0.01	0.78%
LEAD		NR	0.101	1.26E-04	1.100		4.58E-04	48.003	0.002	30.594	0.001	0.003	6.21E-06	0.003	1.802	<0.01	0.64%
ACETONE		NR	0.003	3.41E-06	NR	271.965	0.113	NR	—	0.036	1.15E-06	0.007	1.26E-05	0.113	85.614	<0.01	0.51%
BARIUM		NR	NO BCF	—	NR		—	179.137	0.007	180.333	0.006	0.123	2.21E-04	0.013	9.901	<0.01	0.50%
THALLIUM		NR	0.068	8.49E-05	NR		—	0.510	1.99E-05	ND	—	0.002	3.52E-06	1.08E-04	0.105	<0.01	0.40%
ANTHRACENE	X	NR	ND	—	NR	0.027	1.12E-05	0.202	7.89E-06	ND	—	ND	—	1.91E-05	0.029	<0.01	0.25%
TETRACHLOROETHENE	X	NR	0.637	0.001	NR	0.015	6.29E-06	NR	—	ND	—	0.003	5.05E-06	0.001	1.570	<0.01	0.24%
COPPER		NR	1.801	0.002	9.256		0.004	35.484	0.001	36.368	0.001	0.009	1.68E-05	0.009	15.763	<0.01	0.22%
MANGANESE		NR	NO BCF	—	NR		—	312.554	0.012	335.402	0.011	0.063	1.12E-04	0.023	49.511	<0.01	0.18%
BENZO(k)FLUORANTHENE	X	NR	ND	—	NR	0.002	8.10E-07	0.297	1.16E-05	0.110	3.52E-06	ND	—	1.59E-05	0.036	<0.01	0.17%
BENZO(a)PYRENE	X	NR	ND	—	NR	0.006	2.63E-06	0.311	1.21E-05	ND	—	ND	—	1.48E-05	0.036	<0.01	0.16%
DI-n-BUTYL PHTHALATE		NR	ND	—	NR	0.056	2.32E-05	ND	—	ND	—	ND	—	2.32E-05	0.057	<0.01	0.16%
ANTIMONY		NR	0.015	1.93E-05	NR		—	ND	—	ND	—	0.015	2.74E-05	4.68E-05	0.132	<0.01	0.14%
VANADIUM		NR	NO BCF	—	NR		—	41.858	0.002	44.881	0.001	0.009	1.58E-05	0.003	11.499	<0.01	0.10%
AROCLOR-1248	X	NR	ND	—	NR	0.082	3.41E-05	0.123	4.81E-06	ND	—	ND	—	3.89E-05	0.172	<0.01	0.09%
TRICHLOROETHENE	X	NR	0.105	1.31E-04	NR	0.187	7.78E-05	NR	—	ND	—	0.003	4.63E-06	2.14E-04	1.244	<0.01	0.07%
AROCLOR-1254	X	NR	ND	—	NR	0.037	1.53E-05	0.257	1.00E-05	ND	—	ND	—	2.53E-05	0.172	<0.01	0.06%
1,1,1-TRICHLOROETHANE	X	NR	0.116	1.44E-04	NR	0.007	3.01E-06	NR	—	ND	—	0.003	4.51E-06	1.52E-04	1.262	<0.01	0.05%
DIBENZO(a,h)ANTHRACENE	X	NR	ND	—	NR	ND	—	0.092	3.59E-06	ND	—	ND	—	3.59E-06	0.036	<0.01	0.04%
ARSENIC		NR	0.033	4.14E-05	NR		—	5.377	2.10E-04	6.464	2.07E-04	0.002	3.66E-06	4.62E-04	5.128	<0.01	0.03%
INDENO(1,2,3-cd)PYRENE	X	NR	ND	—	NR	ND	—	0.204	7.94E-06	ND	—	ND	—	7.94E-06	0.091	<0.01	0.03%
MOLYBDENUM		NR	NO BCF	—	NR		—	1.926	7.51E-05	ND	—	0.018	3.14E-05	1.06E-04	1.478	<0.01	0.03%
CHRYSENE	X	NR	ND	—	NR	0.012	5.16E-06	0.361	1.41E-05	0.190	6.08E-06	ND	—	2.53E-05	0.363	<0.01	0.03%
BENZO(b)FLUORANTHENE	X	NR	ND	—	NR	0.002	1.00E-06	0.314	1.22E-05	0.190	6.08E-06	ND	—	1.93E-05	0.362	<0.01	0.02%
FLUORENE	X	NR	ND	—	NR	0.028	1.17E-05	0.193	7.52E-06	ND	—	ND	—	1.93E-05	0.362	<0.01	0.02%
BENZO(a)ANTHRACENE	X	NR	ND	—	NR	0.008	3.32E-06	0.327	1.28E-05	ND	—	ND	—	1.61E-05	0.363	<0.01	0.02%
NICKEL		NR	0.767	0.001	NR		—	29.863	0.001	14.200	4.54E-04	0.008	1.36E-05	0.003	68.390	<0.01	0.02%
BENZO(ghi)PERYLENE	X	NR	ND	—	NR	ND	—	0.205	8.00E-06	ND	—	ND	—	8.00E-06	0.363	<0.01	0.01%

Summary of Ecotoxicological Risk to Mallards in the OU1 881 Hillside Source Area at RFETS

MALLARD OU1 881 HILLSIDE		EXPOSURE POINT												SUMMARY			
		Benthic Macroinvertebrates			Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU1	IR = 0.039 SUF = 0.032			IR = 0.013 SUF = 0.032			IR = 0.001 SUF = 0.039		IR = 0.001 SUF = 0.032		IR = 0.056 SUF = 0.032					
1,2-DICHLOROETHANE	X	NR	0.021	2.60E-05	NR	0.027	1.12E-05	NR	—	ND	—	0.003	4.76E-06	4.20E-05	19.169	<0.01	<0.01%
TOTAL XYLENES	X	NR	0.159	1.99E-04	NR	0.002	6.80E-07	NR	—	ND	—	0.001	1.79E-06	2.01E-04	114.839	<0.01	<0.01%
SILVER		NR	0.784	0.001	0.540		2.25E-04	ND	—	ND	—	0.003	6.11E-06	0.001	1078.772	<0.01	<0.01%
ACENAPHTHENE	X	NR	ND	—	NR	0.040	1.65E-05	0.195	7.60E-06	ND	—	ND	—	2.41E-05	36.331	<0.01	<0.01%
NAPHTHALENE	X	NR	ND	—	NR	0.040	1.68E-05	0.110	4.29E-06	ND	—	ND	—	2.10E-05	36.331	<0.01	<0.01%
PENTACHLOROPHENOL		NR	ND	—	NR	0.019	7.99E-06	ND	—	ND	—	ND	—	7.99E-06	16.920	<0.01	<0.01%
DI-n-OCTYL PHTHALATE		NR	ND	—	NR	0.009	3.80E-06	ND	—	ND	—	ND	—	3.80E-06	46.363	<0.01	<0.01%

HAZARD INDEX 0.26

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mallards in the OU5 Ash Pits Source Area at RFETS

MALLARDS OU5 ASH PITS		EXPOSURE POINT												SUMMARY			
		Benthic Macroinvertebrates			Vegetation			Surficial Soil		Sediment		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	TRV	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU5	IR = 0.039 SUF = 0.007			IR = 0.013 SUF = 0.007			IR = 0.001 SUF = 0.034		IR = 0.001 SUF = 0.007		IR = 0.056 SUF = 0.007					
ALUMINUM		NR	18.747	0.005	264.435		0.024	13038.844	0.443	8571.142	0.060	0.855	3.35E-04	0.533	57.422	0.01	21.67%
MAGNESIUM		NR	NO BCF	—	1466.885		0.133	2929.961	0.100	2095.530	0.015	6.862	0.003	0.250	36.287	0.01	16.09%
CADMIUM		NR	19.257	0.005	2.179		1.98E-04	1.349	4.59E-05	1.197	8.38E-06	0.001	3.90E-07	0.006	1.458	<0.01	9.61%
TIN		NR	57.281	0.016	3.200		2.91E-04	16.661	0.001	9.207	6.45E-05	0.019	7.41E-06	0.017	4.519	<0.01	8.78%
ZINC	X	NR	12.447	0.003	29.216		0.003	69.631	0.002	383.943	0.003	0.018	7.02E-06	0.011	3.017	<0.01	8.51%
BERYLLIUM		NR	0.018	5.05E-06	0.084		7.64E-06	0.940	3.20E-05	0.969	6.78E-06	0.001	5.40E-07	5.20E-05	0.015	<0.01	8.09%
STRONTIUM	X	NR	24.865	0.007	45.069		0.004	38.768	0.001	56.300	3.94E-04	0.247	9.67E-05	0.013	6.623	<0.01	4.58%
LITHIUM	X	NR	NO BCF	—	ND		—	10.380	3.53E-04	6.612	4.63E-05	0.009	3.41E-06	4.03E-04	0.243	<0.01	3.87%
ANTIMONY	X	NR	0.016	4.49E-06	ND		—	ND	—	23.639	1.65E-04	0.015	6.02E-06	1.76E-04	0.132	<0.01	3.11%
BARIUM	X	NR	NO BCF	—	66.746		0.006	143.888	0.005	117.818	0.001	0.071	2.76E-05	0.012	9.901	<0.01	2.83%
LEAD	X	NR	0.135	3.77E-05	1.581		1.44E-04	33.783	0.001	25.470	1.78E-04	0.004	1.48E-06	0.002	1.802	<0.01	2.59%
CHROMIUM		NR	0.010	2.82E-06	1.900		1.73E-04	15.956	0.001	10.564	7.40E-05	0.004	1.53E-06	0.001	1.033	<0.01	2.26%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	1.550	4.34E-04	NR	NR	—	NR	—	0.410	2.87E-06	0.001	3.90E-07	4.37E-04	0.573	<0.01	1.78%
COBALT	X	NR	NO BCF	—	ND		—	8.402	2.86E-04	6.823	4.78E-05	0.007	2.88E-06	3.36E-04	0.445	<0.01	1.76%
MERCURY	X	NR	ND	—	0.073		6.64E-06	0.078	2.64E-06	0.056	3.90E-07	1.10E-04	4.00E-08	9.71E-06	0.024	<0.01	0.94%
MANGANESE		NR	NO BCF	—	42.730		0.004	337.520	0.011	445.908	0.003	0.148	5.79E-05	0.019	49.511	<0.01	0.90%
SELENIUM		NR	0.354	9.92E-05	ND		—	0.410	1.40E-05	1.572	1.10E-05	0.001	4.30E-07	1.25E-04	0.384	<0.01	0.76%
THALLIUM		NR	ND	—	ND		—	0.520	1.77E-05	0.280	1.96E-06	ND	—	1.96E-05	0.105	<0.01	0.44%
NITRATE/NITRITE		NR	NO BCF	—	NR		—	NR	—	16.528	1.16E-04	0.088	3.47E-05	1.50E-04	0.939	<0.01	0.37%
VANADIUM		NR	NO BCF	—	2.300		2.09E-04	36.213	0.001	25.339	1.77E-04	0.009	3.37E-06	0.002	11.499	<0.01	0.41%
COPPER	X	NR	2.222	0.001	7.604		0.001	16.938	0.001	13.145	9.20E-05	0.006	2.21E-06	0.002	15.763	<0.01	0.30%
ARSENIC		NR	0.034	9.52E-06	0.840		7.64E-05	5.715	1.94E-04	7.845	5.49E-05	0.002	8.20E-07	3.36E-04	5.128	<0.01	0.15%
MOLYBDENUM		NR	NO BCF	—	ND		—	0.928	3.15E-05	3.529	2.47E-05	0.020	7.73E-06	6.40E-05	1.478	<0.01	0.10%
NICKEL		NR	ND	—	14.803		0.001	13.578	4.62E-04	14.020	9.81E-05	0.009	3.42E-06	0.002	68.390	<0.01	0.07%
METHYLENE CHLORIDE	X	NR	0.025	6.97E-06	NR	NR	—	NR	—	0.012	8.00E-08	0.005	1.86E-06	8.91E-06	0.804	<0.01	0.03%
1,2-DICHLOROETHANE		NR	0.024	6.75E-06	NR	NR	—	NR	—	ND	—	0.003	1.20E-06	7.95E-06	19.169	<0.01	<0.01%
SILVER	X	NR	0.840	2.35E-04	0.970		8.83E-05	1.807	6.14E-05	2.400	1.68E-05	0.003	1.26E-06	4.03E-04	1078.772	<0.01	<0.01%
ACETONE		NR	0.003	9.80E-07	NR	NR	—	NR	—	1.165	8.15E-06	0.009	3.51E-06	1.26E-05	85.614	<0.01	<0.01%

HAZARD INDEX 0.04

Notes:

RFETS = Rocky Flats Environmental Technology Site
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IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

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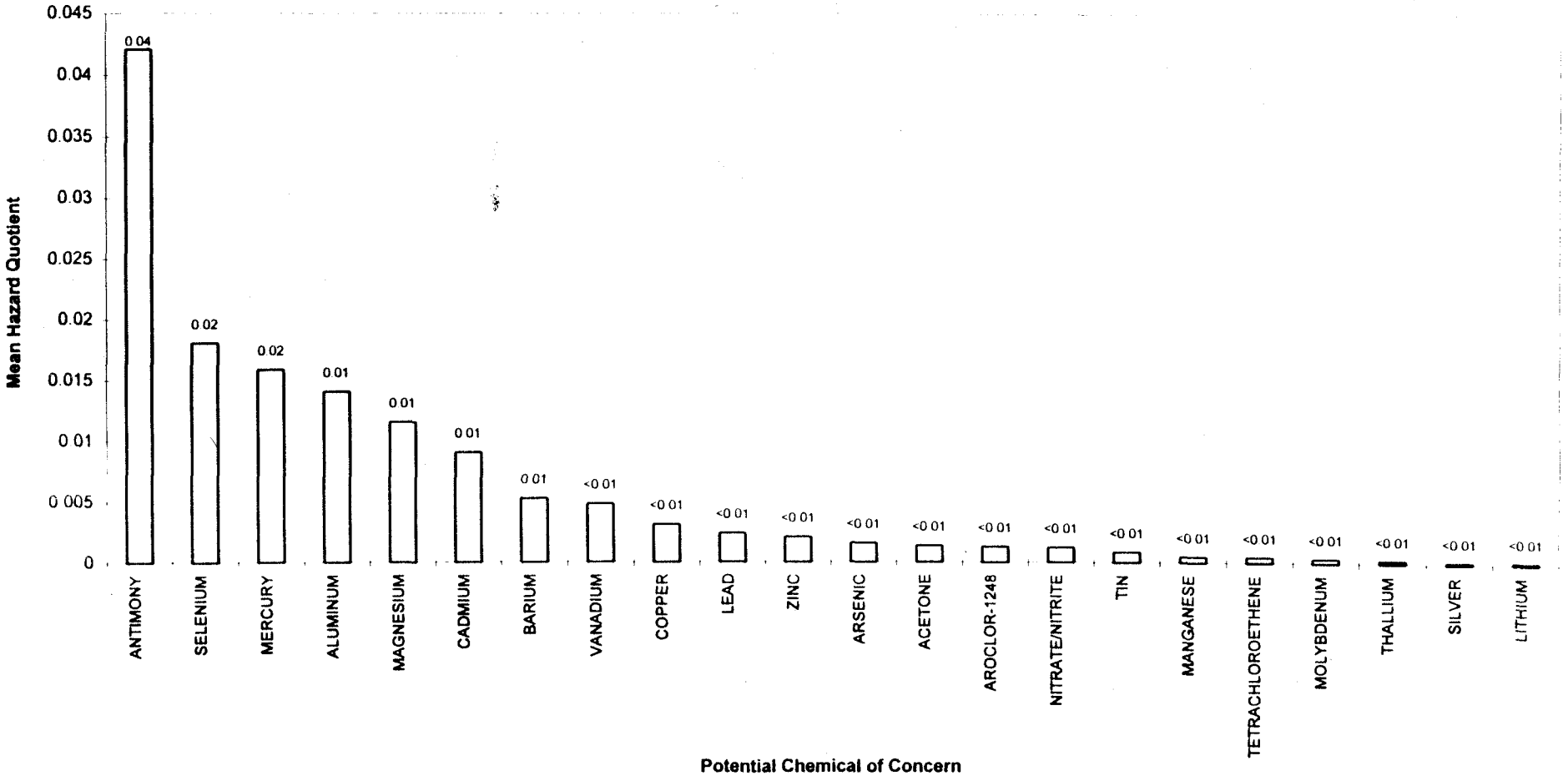
Summary of Ecotoxicological Risk to Coyotes

Summary of Sitewide Ecotoxicological Risk to Coyotes at RFETS

Mean Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



Note: Variation in similar values is due to rounding

Summary of Sitewide Ecotoxic[illegible]gical Risk to Coyotes at RFETS

COYOTE

Analyte	OU1 881 Hillside	OU5 Ash Pits	OU6 C Ponds	OU6 Old Landfill	OU2 903 Pad	OU5 Surface Disturbance	OU2 East Trenches	OU4 Downgradient	OU6 A Ponds	OU6 B Ponds	OU2 Mound Area	OU6 North Spray Field	OU6 Burial Trenches	OU7 Downgradient Areas	OU6 Soil Dump Areas	OU11 West Spray Field	Mean Hazard Quotient	Hazard Quotient Range	Percent of Total Risk
ANTIMONY	8.76E-04	4.26E-04	1.34E-03	1.26E-03	2.02E-03	—	—	—	0.19	0.18	—	3.96E-04	—	—	—	8.47E-04	0.04	<0.001 - 0.191	30.43%
SELENIUM	0.03	8.89E-05	0.02	7.88E-04	0.03	—	0.05	8.00E-04	1.23E-03	0.10	—	1.68E-05	1.29E-03	0.02	3.88E-03	1.53E-04	0.02	<0.001 - 0.1	13.09%
MERCURY	1.05E-03	3.80E-03	9.81E-04	1.08E-03	0.01	3.11E-04	—	0.05	3.15E-03	0.03	—	1.27E-04	1.37E-04	0.01	0.10	—	0.02	<0.001 - 0.1	11.48%
ALUMINUM	0.01	0.03	0.01	0.02	0.02	3.72E-04	0.02	0.01	0.02	0.03	9.79E-04	0.01	2.27E-03	2.64E-03	0.02	0.02	0.01	<0.001 - 0.031	10.19%
MAGNESIUM	3.91E-03	0.01	3.67E-03	0.02	0.01	3.54E-05	1.71E-03	0.01	0.04	0.03	1.07E-04	0.02	4.95E-03	0.01	0.02	1.40E-03	0.01	<0.001 - 0.043	8.36%
CADMIUM	0.04	1.57E-03	0.01	1.01E-03	0.03	—	0.03	3.60E-04	6.92E-04	5.43E-04	—	1.98E-03	4.81E-05	0.01	7.40E-04	2.23E-04	0.01	<0.001 - 0.036	6.56%
BARIUM	2.89E-03	0.01	1.85E-03	0.01	0.01	4.88E-05	2.80E-03	3.19E-03	0.01	0.01	1.31E-04	0.01	1.73E-03	3.73E-03	0.01	3.24E-03	0.01	<0.001 - 0.014	3.83%
VANADIUM	3.61E-03	3.33E-03	2.03E-03	1.99E-03	0.01	8.69E-05	3.92E-03	1.20E-03	0.01	0.03	2.44E-04	1.48E-03	2.38E-03	4.69E-03	1.91E-03	4.92E-03	<0.01	<0.001 - 0.029	3.49%
COPPER	0.01	3.22E-03	1.89E-03	3.35E-03	4.43E-03	2.82E-06	0.01	1.54E-03	0.01	0.01	5.20E-06	2.55E-04	8.78E-04	1.85E-03	1.40E-03	1.06E-04	<0.01	<0.001 - 0.012	2.27%
LEAD	2.02E-03	1.09E-03	1.31E-03	1.10E-03	2.84E-03	5.79E-06	0.01	7.09E-05	0.01	0.01	1.31E-05	2.02E-04	4.35E-04	1.92E-03	8.93E-04	7.76E-04	<0.01	<0.001 - 0.011	1.73%
ZINC	2.72E-03	1.23E-03	2.93E-03	1.42E-03	3.47E-03	8.20E-07	0.01	6.00E-04	4.52E-03	3.23E-03	1.90E-06	8.60E-05	7.68E-04	1.29E-03	1.27E-03	3.77E-05	<0.01	<0.001 - 0.01	1.50%
ARSENIC	2.04E-03	2.85E-03	1.09E-03	1.91E-03	2.04E-03	6.24E-05	3.17E-03	9.66E-04	2.05E-03	2.24E-03	1.89E-04	4.21E-04	5.04E-05	1.12E-04	1.28E-03	0.01	<0.01	<0.001 - 0.005	1.16%
ACETONE	0.01	1.38E-05	7.47E-05	7.99E-05	3.04E-03	—	0.01	1.07E-05	9.11E-06	4.39E-05	3.05E-05	—	1.75E-06	—	3.05E-04	1.88E-04	<0.01	<0.001 - 0.009	0.99%
AROCLOR-1248	1.46E-03	—	—	—	1.18E-03	—	—	—	—	—	—	—	—	—	—	—	<0.01	0.001 - 0.001	0.95%
NITRATE/NITRITE	0.01	1.05E-04	2.01E-03	2.69E-03	1.00E-03	—	—	6.01E-06	—	—	—	1.01E-06	—	5.43E-06	3.10E-05	1.64E-04	<0.01	<0.001 - 0.006	0.90%
TIN	1.45E-04	8.53E-05	8.53E-05	5.20E-05	2.03E-04	—	1.63E-04	2.61E-04	4.67E-03	4.04E-03	—	—	2.96E-04	5.91E-04	6.27E-04	2.66E-05	<0.01	<0.001 - 0.005	0.63%
MANGANESE	2.56E-04	6.94E-04	2.01E-04	4.02E-04	1.15E-03	8.14E-06	4.17E-04	3.00E-04	1.50E-03	9.75E-04	1.79E-05	2.95E-04	1.66E-04	2.09E-04	6.69E-04	5.10E-04	<0.01	<0.001 - 0.002	0.35%
TETRACHLOROETHENE	1.55E-05	—	—	4.20E-07	1.90E-05	—	3.60E-03	3.00E-08	—	2.47E-05	5.40E-07	—	—	—	1.80E-07	—	<0.01	<0.001 - 0.004	0.33%
MOLYBDENUM	2.71E-04	1.41E-04	3.19E-04	7.89E-04	1.12E-03	—	—	2.81E-04	3.00E-04	2.69E-04	—	—	1.37E-05	4.56E-05	8.75E-04	1.39E-04	<0.01	<0.001 - 0.001	0.28%
THALLIUM	3.95E-04	1.19E-04	4.66E-04	2.42E-04	1.45E-04	—	—	5.11E-05	—	1.87E-05	1.35E-05	1.16E-03	—	—	5.62E-05	1.50E-04	<0.01	<0.001 - 0.001	0.19%
SILVER	1.30E-05	1.91E-05	7.93E-06	2.55E-05	2.75E-05	—	2.04E-05	—	7.43E-04	6.40E-04	—	—	1.88E-05	3.05E-04	—	—	<0.01	<0.001 - 0.001	0.13%
LITHIUM	1.36E-04	7.61E-05	1.41E-04	8.90E-05	2.89E-04	2.28E-06	1.67E-04	3.72E-04	7.66E-04	1.58E-04	6.16E-06	9.30E-06	4.38E-06	3.82E-05	5.02E-04	1.45E-04	<0.01	<0.001 - 0.001	0.13%
STRONTIUM	6.54E-05	2.54E-04	8.75E-05	2.96E-04	1.50E-04	4.80E-07	1.57E-05	1.24E-04	4.92E-04	5.83E-04	1.66E-06	1.81E-04	5.77E-05	1.35E-04	3.70E-04	1.21E-05	<0.01	<0.001 - 0.001	0.13%
BERYLLIUM	1.89E-04	1.47E-04	7.36E-05	8.65E-05	1.80E-04	2.99E-06	1.06E-04	4.39E-04	5.18E-05	4.02E-05	—	1.37E-05	3.24E-06	5.48E-05	1.05E-03	1.39E-04	<0.01	<0.001 - 0.001	0.12%
METHYLENE CHLORIDE	8.48E-04	1.25E-05	3.12E-05	1.37E-05	4.00E-04	—	6.44E-04	1.31E-06	2.33E-05	—	3.30E-06	—	1.04E-06	—	9.30E-07	3.65E-05	<0.01	<0.001 - 0.001	0.12%
NICKEL	5.51E-05	1.26E-04	2.19E-05	2.58E-04	1.06E-04	8.30E-07	3.44E-05	2.40E-05	1.55E-03	4.51E-05	1.87E-06	3.13E-05	4.31E-06	1.18E-05	9.83E-05	3.10E-05	<0.01	<0.001 - 0.002	0.11%
TOLUENE	1.25E-03	—	4.50E-06	4.60E-07	6.73E-04	—	2.32E-05	1.98E-06	1.80E-07	1.70E-07	1.12E-06	1.80E-07	1.30E-07	2.45E-06	2.55E-06	2.10E-06	<0.01	<0.001 - 0.001	0.10%
AROCLOR-1254	1.50E-04	—	—	1.19E-04	3.17E-04	—	8.52E-06	—	—	5.28E-06	3.31E-05	—	—	—	1.17E-04	—	<0.01	<0.001 - <0.001	0.08%
COBALT	1.52E-04	1.17E-04	1.30E-04	7.58E-05	2.30E-04	3.77E-06	1.70E-04	3.27E-05	8.41E-05	1.15E-04	8.21E-06	2.58E-05	—	—	6.65E-05	1.82E-04	<0.01	<0.001 - <0.001	0.07%
4-METHYL-2-PENTANONE	4.47E-04	—	—	1.40E-07	2.78E-04	—	4.51E-06	—	—	—	3.40E-07	—	1.00E-08	1.70E-07	3.80E-07	—	<0.01	<0.001 - <0.001	0.07%
BENZO(a)PYRENE	5.08E-05	—	—	2.48E-04	6.36E-05	—	3.51E-05	8.89E-06	—	—	1.41E-06	—	—	—	5.97E-05	—	<0.01	<0.001 - <0.001	0.05%
CHLOROFORM	1.31E-04	—	8.32E-06	3.98E-06	1.21E-04	—	5.17E-05	—	—	5.53E-06	4.20E-07	—	1.00E-08	—	—	7.00E-06	<0.01	<0.001 - <0.001	0.03%
delta-BHC	—	—	—	—	—	—	—	—	3.18E-05	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	0.02%
DIBENZO(a,h)ANTHRACENE	1.36E-05	—	—	6.88E-05	1.70E-05	—	—	2.07E-06	—	—	—	—	—	—	1.54E-05	—	<0.01	<0.001 - <0.001	0.02%
TOTAL XYLENES	3.54E-05	—	—	7.20E-07	2.19E-05	—	8.14E-05	—	—	—	—	—	—	4.00E-08	3.20E-07	—	<0.01	<0.001 - <0.001	0.02%
BIS(2-ETHYLHEXYL)PHTHALAT	1.45E-04	1.90E-06	1.19E-05	7.35E-06	2.05E-05	—	2.82E-06	2.37E-06	—	—	6.35E-06	—	—	6.00E-08	1.63E-05	8.65E-06	<0.01	<0.001 - <0.001	0.01%
DIELDRIN	—	—	—	1.82E-05	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	0.01%
ENDRIN KETONE	—	—	—	1.58E-05	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	0.01%
PENTACHLOROPHENOL	2.12E-06	—	—	4.00E-05	—	—	—	—	—	—	—	—	—	—	2.87E-06	—	<0.01	<0.001 - <0.001	0.01%
BENZO(k)FLUORANTHENE	4.55E-06	—	—	1.53E-05	5.75E-06	—	—	5.80E-07	—	—	—	—	—	—	2.61E-05	—	<0.01	<0.001 - <0.001	0.01%
BENZO(b)FLUORANTHENE	4.82E-06	—	—	2.90E-05	6.36E-06	—	4.41E-06	8.10E-07	—	—	1.80E-07	—	—	—	1.02E-05	—	<0.01	<0.001 - <0.001	0.01%
1,2-DICHLOROETHENE	3.22E-06	—	—	—	9.81E-06	—	6.45E-06	—	—	5.30E-06	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
BENZO(a)ANTHRACENE	5.44E-06	—	—	2.70E-05	6.53E-06	—	2.01E-06	7.10E-07	—	—	1.30E-07	—	—	1.00E-08	6.32E-06	—	<0.01	<0.001 - <0.001	<0.01%
INDENO(1,2,3-cd)PYRENE	3.01E-06	—	—	2.29E-05	3.48E-06	—	3.00E-08	6.70E-07	—	—	7.00E-08	—	—	—	3.96E-06	—	<0.01	<0.001 - <0.001	<0.01%
1,1-DICHLOROETHENE	1.15E-05	—	—	—	5.00E-07	—	2.17E-06	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
PYRENE	2.30E-05	—	9.00E-08	9.72E-06	5.85E-06	—	9.40E-07	1.20E-07	—	—	4.00E-08	—	—	1.00E-08	2.20E-06	—	<0.01	<0.001 - <0.001	<0.01%
BENZYL ALCOHOL	1.30E-06	—	—	—	6.31E-06	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
TRICHLOROETHENE	2.24E-06	—	—	1.11E-06	9.06E-06	—	1.53E-05	—	—	1.86E-06	5.00E-08	—	1.00E-08	—	—	3.50E-07	<0.01	<0.001 - <0.001	<0.01%
2-BUTANONE	2.24E-05	—	1.60E-07	1.00E-07	6.20E-07	—	6.00E-07	—	—	—	3.00E-08	—	2.00E-08	—	1.13E-06	3.80E-07	<0.01	<0.001 - <0.001	<0.01%
CHROMIUM	1.55E-06	5.40E-07	2.63E-06	4.80E-07	7.50E-06	1.00E-08	2.12E-06	1.50E-07	1.43E-05	1.01E-05	2.00E-08	6.00E-08	1.23E-06	3.08E-06	3.00E-07	6.60E-07	<0.01	<0.001 - <0.001	<0.01%
FLUORANTHENE	1.15E-05	—	5.00E-08	6.70E-06	3.16E-06	—	5.70E-07	7.00E-08	—	—	5.00E-08	—	—	2.40E-09	1.36E-06	—	<0.01	<0.001 - <0.001	<0.01%
1,2-DICHLOROETHANE	4.00E-06	2.03E-06	—	—	—	—	—	—	—	1.77E-06	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
PHENOL	—	—	—	2.57E-06	—	—	—	—	—	—	—	—	—	—	1.35E-06	—	<0.01	<0.001 - <0.001	<0.01%
ENDOSULFAN SULFATE	—	—	—	1.05E-06	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
HEPTACHLOR EPOXIDE	—	—	—	1.04E-06	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
ALDRIN	1.64E-06	—	—	9.90E-07	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%

Summary of Sitewide Ecotoxic[illegible]cal Risk to Coyotes at RFETS

COYOTE																			
Analyte	OU1 881 Hillside	OU5 Ash Pits	OU5 C Ponds	OU5 Old Landfill	OU2 903 Pad	OU5 Surface Disturbance	OU2 East Trenches	OU4 Downgradient	OU5 A Ponds	OU5 B Ponds	OU2 Mound Area	OU6 North Spray Field	OU6 Burial Trenches	OU7 Downgradient Areas	OU8 Soil Dump Areas	OU11 West Spray Field	Mean Hazard Quotient	Hazard Quotient Range	Percent of Total Risk
FLUORENE	4.00E-07	—	—	2.67E-06	2.80E-07	—	2.80E-07	—	—	—	—	—	—	—	2.20E-07	—	<0.01	<0.001 - <0.001	<0.01%
1,1-DICHLOROETHANE	7.00E-07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
PHENANTHRENE	3.39E-06	—	—	1.13E-06	7.70E-07	—	6.00E-08	3.26E-09	—	—	1.26E-09	—	—	6.67E-10	1.30E-07	—	<0.01	<0.001 - <0.001	<0.01%
CHRYSENE	6.30E-07	—	—	2.92E-06	6.90E-07	—	3.50E-07	1.00E-07	—	—	1.00E-08	—	—	7.41E-10	7.00E-07	—	<0.01	<0.001 - <0.001	<0.01%
METHOXYCHLOR	—	—	—	6.00E-07	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
BENZENE	—	—	—	—	—	—	1.63E-06	—	—	—	1.80E-07	—	2.80E-09	—	1.50E-07	—	<0.01	<0.001 - <0.001	<0.01%
4,4'-DDT	—	—	—	4.10E-07	—	—	8.00E-08	—	8.60E-07	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
AROCLOR-1260	—	—	—	2.00E-08	—	—	—	—	—	—	6.30E-07	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
BENZO(ghi)PERYLENE	3.00E-07	—	—	8.30E-07	3.50E-07	—	1.00E-08	8.00E-08	—	—	1.00E-08	—	—	—	3.50E-07	—	<0.01	<0.001 - <0.001	<0.01%
NAPHTHALENE	5.00E-08	—	—	8.00E-07	—	—	1.20E-07	—	—	—	—	—	—	—	1.00E-08	—	<0.01	<0.001 - <0.001	<0.01%
1,1,1-TRICHLOROETHANE	1.80E-07	—	—	1.19E-09	1.00E-08	—	1.03E-06	—	—	—	—	—	—	2.11E-10	—	—	<0.01	<0.001 - <0.001	<0.01%
BUTYL BENZYL PHTHALATE	—	—	—	3.80E-07	4.10E-07	—	—	1.00E-07	—	—	—	—	—	2.00E-08	1.10E-07	—	<0.01	<0.001 - <0.001	<0.01%
DI-n-BUTYL PHTHALATE	7.00E-08	—	—	5.00E-08	3.50E-07	—	4.00E-08	1.00E-08	5.60E-07	1.70E-07	2.00E-08	—	—	—	1.00E-07	4.90E-07	<0.01	<0.001 - <0.001	<0.01%
ISOPHORONE	—	—	—	1.40E-07	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
2-METHYLNAPHTHALENE	—	—	—	1.50E-07	—	—	8.00E-08	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
ANTHRACENE	5.00E-08	—	—	3.60E-07	5.00E-08	—	2.00E-08	—	—	—	—	—	—	—	5.00E-08	—	<0.01	<0.001 - <0.001	<0.01%
ACENAPHTHENE	6.00E-08	—	—	3.50E-07	4.00E-08	—	4.00E-08	—	—	—	—	—	—	—	3.00E-08	—	<0.01	<0.001 - <0.001	<0.01%
DI-n-OCTYL PHTHALATE	1.00E-08	—	—	1.00E-08	—	—	—	1.00E-08	—	—	—	—	—	—	8.00E-08	—	<0.01	<0.001 - <0.001	<0.01%

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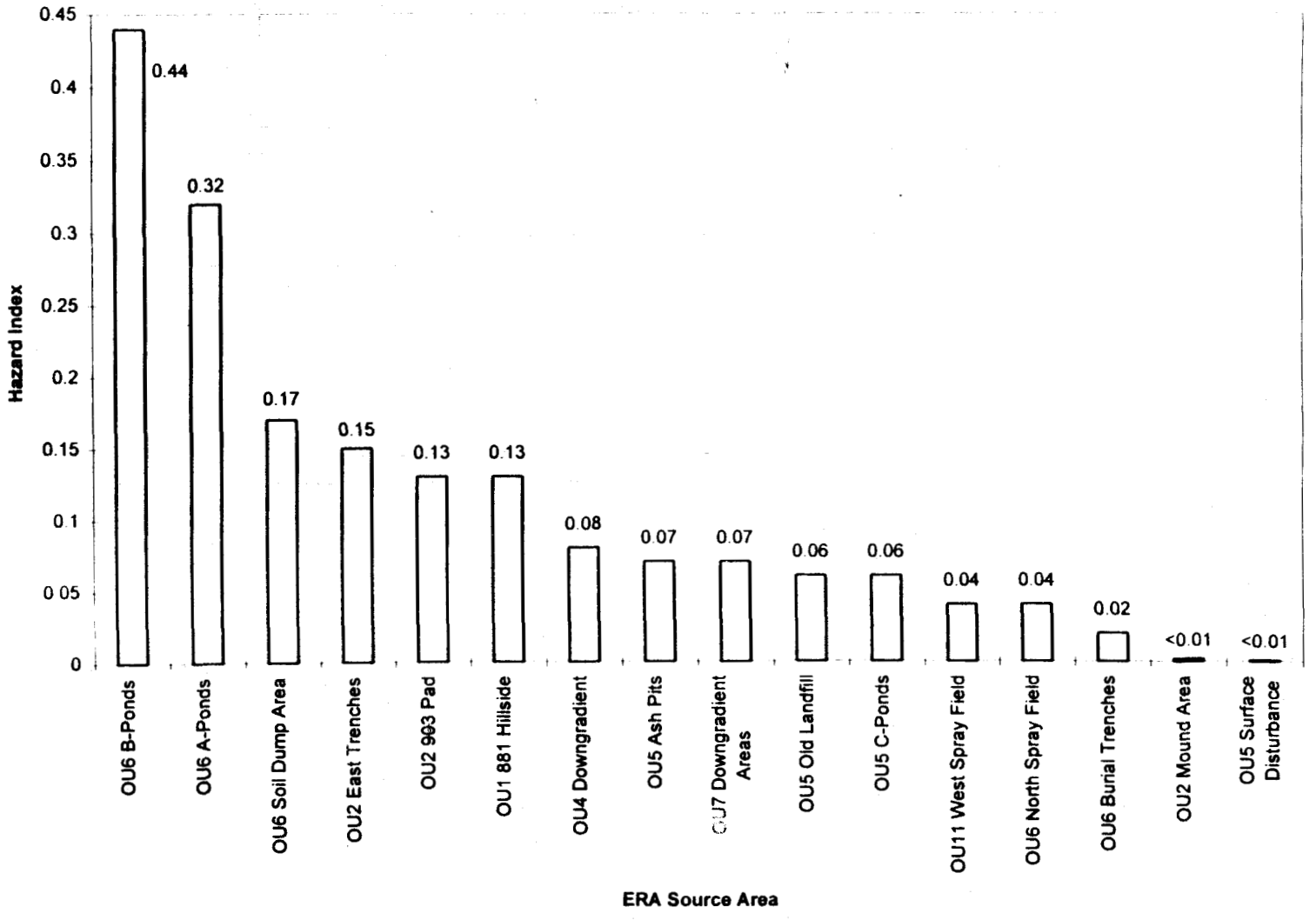
Summary of Ecotoxicological Risk to Coyotes at RFETS



Summary of Ecotoxicological Risk to Coyotes in the OU6 B-Ponds Source Area at RFETS

COYOTES OU6 B-PONDS		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU6	IR = 0.042 SUF = 0.006		IR = 0.005 SUF = 0.006			IR = 0.001 SUF = 0.006		IR = 0.077 SUF = 0.164					
ANTIMONY	X	121.202	0.031	ND		—	ND	—	0.009	1.07E-04	0.031	0.170	0.18	40.80%
SELENIUM		53.918	0.014	2.818		8.45E-05	ND	—	0.002	2.55E-05	0.014	0.137	0.10	22.62%
MAGNESIUM	X	5898.794	1.486	1669.753		0.050	3790.000	0.023	15.504	0.196	1.755	51.154	0.03	7.74%
MERCURY	X	0.235	5.92E-05	0.086		2.58E-06	ND	—	2.75E-04	3.47E-06	6.52E-05	0.002	0.03	6.94%
ALUMINUM		2019.911	0.509	172.535		0.005	18700.000	0.112	0.264	0.003	0.630	20.639	0.03	6.88%
VANADIUM	X	28.178	0.007	1.200		3.60E-05	38.900	2.33E-04	0.003	3.60E-05	0.007	0.255	0.03	6.54%
BARIUM	X	55.126	0.014	53.768		0.002	194.000	0.001	0.051	0.001	0.017	1.654	0.01	2.36%
LEAD	X	78.532	0.020	1.274		3.82E-05	37.200	2.23E-04	0.005	6.47E-05	0.020	2.435	0.01	1.86%
COPPER	X	112.560	0.028	29.452		0.001	17.000	1.02E-04	ND	—	0.029	5.041	0.01	1.31%
TIN		117.725	0.030	25.800		0.001	ND	—	0.006	8.01E-05	0.031	7.551	<0.01	0.91%
ZINC	X	606.869	0.153	116.031		0.003	64.100	3.85E-04	0.026	3.29E-04	0.157	48.696	<0.01	0.73%
ARSENIC	X	ND	—	2.700		8.10E-05	5.100	3.06E-05	0.002	2.84E-05	1.40E-04	0.063	<0.01	0.51%
MANGANESE	X	84.595	0.021	53.948		0.002	321.000	0.002	0.098	0.001	0.026	26.783	<0.01	0.22%
SILVER	X	16.472	0.004	4.700		1.41E-04	ND	—	ND	—	0.004	6.711	<0.01	0.14%
STRONTIUM	X	163.891	0.041	66.453		0.002	25.500	1.53E-04	0.255	0.003	0.047	80.043	<0.01	0.13%
CADMIUM		ND	—	2.034		6.10E-05	ND	—	0.001	1.25E-05	7.35E-05	0.135	<0.01	0.12%
MOLYBDENUM	X	ND	—	3.800		1.14E-04	ND	—	0.007	9.29E-05	2.07E-04	0.768	<0.01	0.06%
LITHIUM		ND	—	6.600		1.98E-04	5.900	3.54E-05	0.017	2.19E-04	4.52E-04	2.856	<0.01	0.04%
COBALT	X	ND	—	3.300		9.90E-05	9.000	5.40E-05	0.002	2.00E-05	1.73E-04	1.510	<0.01	0.03%
NICKEL	X	ND	—	13.890		4.17E-04	14.600	8.76E-05	0.004	4.49E-05	0.001	12.174	<0.01	0.01%
ACETONE	X	NR	—	NR	ND	—	NR	—	0.011	1.33E-04	1.33E-04	3.043	<0.01	0.01%
BERYLLIUM		ND	—	ND		—	0.970	5.82E-06	1.79E-04	2.26E-06	8.08E-06	0.201	<0.01	0.01%
TETRACHLOROETHENE	X	NR	—	NR	ND	—	NR	—	0.004	4.62E-05	4.62E-05	1.866	<0.01	0.01%
THALLIUM		ND	—	ND		—	0.230	1.38E-06	ND	—	1.38E-06	0.074	<0.01	<0.01%
CHROMIUM	X	32.115	0.008	5.293		1.59E-04	19.900	1.19E-04	0.002	2.79E-05	0.008	832.996	<0.01	<0.01%
CHLOROFORM	X	NR	—	NR	ND	—	NR	—	0.002	2.53E-05	2.53E-05	4.565	<0.01	<0.01%
1,2-DICHLOROETHENE	X	NR	—	NR	ND	—	NR	—	0.003	3.19E-05	3.19E-05	6.024	<0.01	<0.01%
AROCLOR-1254	X	NR	—	0.010		3.10E-07	ND	—	NR	—	3.10E-07	0.059	<0.01	<0.01%
TRICHLOROETHENE	X	NR	—	NR	ND	—	NR	—	0.003	3.63E-05	3.63E-05	19.579	<0.01	<0.01%
1,2-DICHLOROETHANE	X	NR	—	NR	ND	—	NR	—	0.001	1.26E-05	1.26E-05	7.118	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	NR	—	ND	—	0.001	1.26E-05	1.26E-05	74.412	<0.01	<0.01%
TOLUENE	X	NR	—	NR	0.020	6.10E-07	NR	—	ND	—	6.10E-07	3.515	<0.01	<0.01%

HAZARD INDEX 0.44

Notes:

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SUF = Site Use Factor

I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Coyotes in the OU6 A-Ponds Source Area at RFETS

COYOTES OU6 A-PONDS		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU6	IR = 0.042 SUF = 0.008		IR = 0.005 SUF = 0.008			IR = 0.001 SUF = 0.008		IR = 0.077 SUF = 0.269					
ANTIMONY	X	95.780	0.032	ND		—	ND	—	0.009	1.83E-04	0.032	0.170	0.19	59.96%
MAGNESIUM	X	5030.433	1.690	2252.596		0.090	1880.000	0.015	18.851	0.390	2.186	51.154	0.04	13.42%
ALUMINUM		925.173	0.311	238.686		0.010	7830.000	0.063	0.405	0.008	0.391	20.639	0.02	5.96%
BARIUM	X	57.799	0.019	40.567		0.002	100.000	0.001	0.062	0.001	0.023	1.654	0.01	4.39%
VANADIUM	X	7.100	0.002	1.700		6.80E-05	51.100	4.09E-04	0.002	4.75E-05	0.003	0.255	0.01	3.58%
LEAD	X	80.277	0.027	1.107		4.43E-05	33.000	2.64E-04	0.003	6.87E-05	0.027	2.435	0.01	3.53%
COPPER	X	106.489	0.036	24.122		0.001	5.000	4.00E-05	0.002	4.35E-05	0.037	5.041	0.01	2.29%
TIN		102.000	0.034	5.798		2.32E-04	93.300	0.001	ND	—	0.035	7.551	<0.01	1.47%
ZINC	X	646.549	0.217	57.285		0.002	65.800	0.001	0.008	1.70E-04	0.220	48.696	<0.01	1.42%
MERCURY	X	ND	—	0.090		3.60E-06	ND	—	1.49E-04	3.09E-06	6.69E-06	0.002	<0.01	0.99%
ARSENIC	X	ND	—	0.920		3.68E-05	2.200	1.76E-05	0.004	7.36E-05	1.28E-04	0.063	<0.01	0.64%
NICKEL	X	54.095	0.018	14.200		0.001	13.100	1.05E-04	0.003	5.75E-05	0.019	12.174	<0.01	0.49%
MANGANESE	X	77.287	0.026	42.435		0.002	1110.000	0.009	0.179	0.004	0.040	26.783	<0.01	0.47%
SELENIUM		ND	—	2.516		1.01E-04	ND	—	0.003	6.80E-05	1.69E-04	0.137	<0.01	0.39%
LITHIUM		ND	—	37.901		0.002	4.800	3.84E-05	0.031	0.001	0.002	2.856	<0.01	0.24%
SILVER	X	14.724	0.005	ND		—	ND	—	0.002	3.86E-05	0.005	6.711	<0.01	0.23%
CADMIUM		ND	—	1.400		5.60E-05	2.200	1.76E-05	0.001	1.99E-05	9.35E-05	0.135	<0.01	0.22%
STRONTIUM	X	85.892	0.029	112.501		0.005	37.100	2.97E-04	0.278	0.006	0.039	80.043	<0.01	0.15%
MOLYBDENUM	X	ND	—	3.100		1.24E-04	5.300	4.24E-05	0.003	6.37E-05	2.30E-04	0.768	<0.01	0.09%
COBALT	X	ND	—	1.000		4.00E-05	7.100	5.68E-05	0.001	3.02E-05	1.27E-04	1.510	<0.01	0.03%
BERYLLIUM		ND	—	ND		—	1.300	1.04E-05	ND	—	1.04E-05	0.201	<0.01	0.02%
delta-BHC		NR	—	NR	NR	—	0.023	1.80E-07	NR	—	1.80E-07	0.006	<0.01	0.01%
METHYLENE CHLORIDE	X	NR	—	NR	ND	—	NR	—	0.002	4.14E-05	4.14E-05	1.780	<0.01	0.01%
CHROMIUM	X	35.026	0.012	ND		—	9.000	7.20E-05	0.002	3.38E-05	0.012	832.996	<0.01	<0.01%
ACETONE	X	NR	—	NR	0.693	2.77E-05	NR	—	ND	—	2.77E-05	3.043	<0.01	<0.01%
4,4'-DDT		NR	—	NR	NR	—	0.026	2.10E-07	NR	—	2.10E-07	0.243	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	NR	—	ND	—	0.002	4.14E-05	4.14E-05	74.412	<0.01	<0.01%
TOLUENE	X	NR	—	NR	0.016	6.40E-07	NR	—	ND	—	6.40E-07	3.515	<0.01	<0.01%

HAZARD INDEX 0.32

Notes:

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IR = Ingestion Rate
SUF = Site Use Factor

I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Coyotes in the OU6 Soil Dump Areas Source Area at RFETS

COYOTES OU6 SOIL DUMP AREAS		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU6	IR = 0.042 SUF = 0.016		IR = 0.005 SUF = 0.016			IR = 0.001 SUF = 0.016		IR = 1 SUF = 1					
MERCURY	X	0.302	2.03E-04	0.090		7.20E-06	0.139	2.22E-06	NR	—	2.12E-04	0.002	0.10	60.21%
ALUMINUM		451.741	0.304	141.997		0.011	9659.033	0.155	NR	—	0.469	20.639	0.02	13.69%
MAGNESIUM	X	1291.996	0.868	1537.931		0.123	2354.730	0.038	NR	—	1.029	51.154	0.02	12.10%
BARIUM	X	11.861	0.008	21.085		0.002	117.141	0.002	NR	—	0.012	1.654	0.01	4.19%
SELENIUM		ND	—	6.623		0.001	ND	—	NR	—	0.001	0.137	<0.01	2.33%
VANADIUM	X	ND	—	0.710		5.68E-05	26.996	4.32E-04	NR	—	4.89E-04	0.255	<0.01	1.15%
COPPER	X	9.200	0.006	8.057		0.001	15.408	2.47E-04	NR	—	0.007	5.041	<0.01	0.84%
ARSENIC	X	ND	—	ND		—	4.989	7.98E-05	NR	—	7.98E-05	0.063	<0.01	0.77%
ZINC	X	85.709	0.058	32.108		0.003	94.049	0.002	NR	—	0.062	48.696	<0.01	0.76%
BERYLLIUM		0.300	2.02E-04	ND		—	0.621	9.93E-06	NR	—	2.12E-04	0.201	<0.01	0.63%
LEAD	X	2.505	0.002	1.224		9.79E-05	24.511	3.92E-04	NR	—	0.002	2.435	<0.01	0.54%
MOLYBDENUM	X	ND	—	8.400		0.001	ND	—	NR	—	0.001	0.768	<0.01	0.53%
CADMIUM		ND	—	0.640		5.12E-05	3.054	4.89E-05	NR	—	1.00E-04	0.135	<0.01	0.45%
MANGANESE	X	15.079	0.010	48.491		0.004	244.118	0.004	NR	—	0.018	26.783	<0.01	0.40%
TIN		6.000	0.004	4.400		3.52E-04	22.063	3.53E-04	NR	—	0.005	7.551	<0.01	0.38%
LITHIUM		ND	—	16.100		0.001	9.142	1.46E-04	NR	—	0.001	2.856	<0.01	0.30%
STRONTIUM	X	33.631	0.023	80.644		0.006	37.401	0.001	NR	—	0.030	80.043	<0.01	0.22%
ACETONE	X	NR	—	NR	11.617	0.001	NR	—	NR	—	0.001	3.043	<0.01	0.18%
AROCLOR 1254	X	NR	—	NR	ND	—	0.429	6.86E-06	NR	—	6.86E-06	0.059	<0.01	0.07%
NICKEL	X	ND	—	12.700		0.001	11.325	1.81E-04	NR	—	0.001	12.174	<0.01	0.06%
COBALT	X	ND	—	ND		—	6.279	1.00E-04	NR	—	1.00E-04	1.510	<0.01	0.04%
BENZO(a)PYRENE	X	NR	—	NR	0.002	1.40E-07	0.495	7.92E-06	NR	—	8.06E-06	0.135	<0.01	0.04%
THALLIUM		ND	—	ND		—	0.260	4.16E-06	NR	—	4.16E-06	0.074	<0.01	0.03%
NITRATE/NITRITE		NR	—	NR		—	7.689	1.23E-04	NR	—	1.23E-04	3.969	<0.01	0.02%
BENZO(k)FLUORANTHENE	X	NR	—	NR	2.55E-04	2.00E-08	2.200	3.52E-05	NR	—	3.52E-05	1.350	<0.01	0.02%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	0.050	4.03E-06	2.270	3.63E-05	NR	—	4.04E-05	2.480	<0.01	0.01%
DIBENZO(a,h)ANTHRACENE	X	NR	—	NR	ND	—	0.130	2.08E-06	NR	—	2.08E-06	0.135	<0.01	0.01%
BENZO(b)FLUORANTHENE	X	NR	—	NR	0.001	8.00E-08	0.855	1.37E-05	NR	—	1.38E-05	1.350	<0.01	0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	0.001	1.20E-07	0.526	8.42E-06	NR	—	8.54E-06	1.350	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	1.36E-04	1.00E-08	0.334	5.34E-06	NR	—	5.35E-06	1.350	<0.01	<0.01%
PENTACHLOROPHENOL		NR	—	NR	0.032	2.60E-06	ND	—	NR	—	2.60E-06	0.906	<0.01	<0.01%
TOLUENE	X	NR	—	NR	0.112	8.98E-06	NR	—	NR	—	8.98E-06	3.515	<0.01	<0.01%
PYRENE	X	NR	—	NR	0.008	6.60E-07	1.337	2.14E-05	NR	—	2.20E-05	9.996	<0.01	<0.01%
FLUORANTHENE	X	NR	—	NR	0.007	5.90E-07	1.376	2.20E-05	NR	—	2.26E-05	16.659	<0.01	<0.01%
PHENOL	X	NR	—	NR	0.305	2.44E-05	ND	—	NR	—	2.44E-05	18.121	<0.01	<0.01%
2-BUTANONE	X	NR	—	NR	7.542	0.001	NR	—	NR	—	0.001	534.882	<0.01	<0.01%
METHYLENE CHLORIDE	X	NR	—	NR	0.021	1.65E-06	NR	—	NR	—	1.65E-06	1.780	<0.01	<0.01%
CHRYSENE	X	NR	—	NR	0.003	2.10E-07	0.577	9.24E-06	NR	—	9.45E-06	13.503	<0.01	<0.01%
4-METHYL-2-PENTANONE	X	NR	—	NR	0.036	2.90E-06	NR	—	NR	—	2.90E-06	7.609	<0.01	<0.01%

Summary of Ecotoxicological Risk to Coyotes in the OU6 Soil Dump Areas Source Area at RFETS

COYOTES OU6 SOIL DUMP AREAS		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU6	IR = 0.042 SUF = 0.016		IR = 0.005 SUF = 0.016			IR = 0.001 SUF = 0.016		IR = I SUF = I					
BENZO(ghi)PERYLENE	X	NR	—	NR	ND	—	0.292	4.67E-06	NR	—	4.67E-06	13.503	<0.01	<0.01%
TOTAL XYLENES		NR	—	NR	0.001	9.00E-08	NR	—	NR	—	9.00E-08	0.279	<0.01	<0.01%
CHROMIUM	X	ND	—	ND		—	15.651	2.50E-04	NR	—	2.50E-04	832.996	<0.01	<0.01%
FLUORENE	X	NR	—	NR	ND	—	0.232	3.70E-06	NR	—	3.70E-06	16.659	<0.01	<0.01%
TETRACHLOROETHENE	X	NR	—	NR	0.004	3.30E-07	NR	—	NR	—	3.30E-07	1.866	<0.01	<0.01%
BENZENE	X	NR	—	NR	0.007	5.50E-07	NR	—	NR	—	5.50E-07	3.567	<0.01	<0.01%
PHENANTHRENE	X	NR	—	NR	0.016	1.29E-06	1.056	1.69E-05	NR	—	1.82E-05	135.026	<0.01	<0.01%
BUTYL BENZYL PHTHALATE	X	NR	—	NR	ND	—	0.072	1.15E-06	NR	—	1.15E-06	10.686	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	ND	—	0.473	7.56E-06	NR	—	7.56E-06	74.412	<0.01	<0.01%
DI-n-OCTYL PHTHALATE	X	NR	—	NR	6.60E-05	1.00E-08	0.658	1.05E-05	NR	—	1.05E-05	139.384	<0.01	<0.01%
ANTHRACENE	X	NR	—	NR	ND	—	0.382	6.11E-06	NR	—	6.11E-06	133.274	<0.01	<0.01%
ACENAPHTHENE	X	NR	—	NR	0.009	7.10E-07	0.244	3.90E-06	NR	—	4.61E-06	135.026	<0.01	<0.01%
NAPHTHALENE	X	NR	—	NR	ND	—	0.110	1.76E-06	NR	—	1.76E-06	135.026	<0.01	<0.01%

HAZARD INDEX 0.17

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SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Coyotes ... the OU2 East Trenches Source Area at RFETS

COYOTES OU2 EAST TRENCHES		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU2	IR = 0.042 SUF = 0.036		IR = 0.005 SUF = 0.036			IR = 0.001 SUF = 0.036		IR = 1 SUF = 1					
SELENIUM		4.609	0.007	ND		—	0.510	1.84E-05	NR	—	0.007	0.137	0.05	34.55%
CADMIUM		2.548	0.004	2.217		3.99E-04	1.400	5.04E-05	NR	—	0.004	0.135	0.03	21.50%
ALUMINUM		NR	—	NR		—	12216.913	0.440	NR	—	0.440	20.639	0.02	14.39%
ZINC		308.380	0.466	33.840		0.006	54.004	0.002	NR	—	0.474	48.696	0.01	6.58%
LEAD	X	8.589	0.013	1.509		2.72E-04	45.985	0.002	NR	—	0.015	2.435	0.01	4.14%
COPPER		17.166	0.026	10.430		0.002	13.080	4.71E-04	NR	—	0.028	5.041	0.01	3.79%
ACETONE		NR	—	NR	86.139	0.016	NR	—	NR	—	0.016	3.043	0.01	3.44%
VANADIUM		NR	—	NR		—	27.790	0.001	NR	—	0.001	0.255	<0.01	2.65%
TETRACHLOROETHENE		NR	—	NR	37.359	0.007	NR	—	NR	—	0.007	1.866	<0.01	2.43%
ARSENIC		NR	—	NR		—	5.496	1.98E-04	NR	—	1.98E-04	0.063	<0.01	2.14%
BARIUM		NR	—	NR		—	128.840	0.005	NR	—	0.005	1.654	<0.01	1.89%
MAGNESIUM		NR	—	NR		—	2431.742	0.088	NR	—	0.088	51.154	<0.01	1.16%
METHYLENE CHLORIDE		NR	—	NR	6.373	0.001	NR	—	NR	—	0.001	1.780	<0.01	0.44%
MANGANESE		NR	—	NR		—	310.494	0.011	NR	—	0.011	26.783	<0.01	0.28%
COBALT		NR	—	NR		—	7.136	2.57E-04	NR	—	2.57E-04	1.510	<0.01	0.11%
LITHIUM		NR	—	NR		—	13.267	4.78E-04	NR	—	4.78E-04	2.856	<0.01	0.11%
TIN		NR	—	NR		—	34.188	0.001	NR	—	0.001	7.551	<0.01	0.11%
BERYLLIUM		NR	—	NR		—	0.590	2.12E-05	NR	—	2.12E-05	0.201	<0.01	0.07%
TOTAL XYLENES		NR	—	NR	0.126	2.27E-05	NR	—	NR	—	2.27E-05	0.279	<0.01	0.05%
CHLOROFORM		NR	—	NR	1.310	2.36E-04	NR	—	NR	—	2.36E-04	4.565	<0.01	0.03%
BENZO(a)PYRENE	X	NR	—	NR	0.002	4.20E-07	0.120	4.32E-06	NR	—	4.74E-06	0.135	<0.01	0.02%
NICKEL		NR	—	NR		—	11.629	4.19E-04	NR	—	4.19E-04	12.174	<0.01	0.02%
TOLUENE		NR	—	NR	0.453	8.15E-05	NR	—	NR	—	8.15E-05	3.515	<0.01	0.02%
SILVER		ND	—	0.520		9.36E-05	1.200	4.32E-05	NR	—	1.37E-04	6.711	<0.01	0.01%
STRONTIUM		NR	—	NR		—	34.852	0.001	NR	—	0.001	80.043	<0.01	0.01%
TRICHLOROETHENE		NR	—	NR	1.663	2.99E-04	NR	—	NR	—	2.99E-04	19.579	<0.01	0.01%
AROCLOR-1254	X	NR	—	NR	0.003	5.00E-07	ND	—	NR	—	5.00E-07	0.059	<0.01	0.01%
1,2-DICHLOROETHENE		NR	—	NR	0.216	3.89E-05	NR	—	NR	—	3.89E-05	6.024	<0.01	<0.01%
4-METHYL-2-PENTANONE		NR	—	NR	0.191	3.43E-05	NR	—	NR	—	3.43E-05	7.609	<0.01	<0.01%
BENZO(b)FLUORANTHENE	X	NR	—	NR	0.001	2.00E-07	0.160	5.76E-06	NR	—	5.96E-06	1.350	<0.01	<0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	0.024	4.26E-06	0.076	2.74E-06	NR	—	7.00E-06	2.480	<0.01	<0.01%
1,1-DICHLOROETHENE		NR	—	NR	0.030	5.42E-06	NR	—	NR	—	5.42E-06	2.497	<0.01	<0.01%
CHROMIUM	X	ND	—	7.227		0.001	12.981	4.67E-04	NR	—	0.002	832.996	<0.01	<0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	0.003	4.80E-07	0.062	2.23E-06	NR	—	2.71E-06	1.350	<0.01	<0.01%
BENZENE		NR	—	NR	0.032	5.81E-06	NR	—	NR	—	5.81E-06	3.567	<0.01	<0.01%
1,1,1-TRICHLOROETHANE		NR	—	NR	0.813	1.46E-04	NR	—	NR	—	1.46E-04	142.350	<0.01	<0.01%
PYRENE	X	NR	—	NR	0.009	1.58E-06	0.218	7.86E-06	NR	—	9.44E-06	9.996	<0.01	<0.01%
2-BUTANONE		NR	—	NR	1.787	3.22E-04	NR	—	NR	—	3.22E-04	534.882	<0.01	<0.01%
FLUORANTHENE	X	NR	—	NR	0.007	1.25E-06	0.229	8.24E-06	NR	—	9.49E-06	16.659	<0.01	<0.01%

Summary of Ecotoxicological Risk to Coyotes in the OU2 East Trenches Source Area at RFETS

COYOTES OU2 EAST TRENCHES		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC In OU2	IR = 0.042 SUF = 0.036		IR = 0.005 SUF = 0.036			IR = 0.001 SUF = 0.036		IR = I SUF = I					
CHRYSENE	X	NR	—	NR	0.004	7.00E-07	0.110	3.96E-06	NR	—	4.66E-06	13.503	<0.01	<0.01%
FLUORENE		NR	—	NR	0.026	4.59E-06	ND	—	NR	—	4.59E-06	16.659	<0.01	<0.01%
NAPHTHALENE		NR	—	NR	0.093	1.68E-05	ND	—	NR	—	1.68E-05	135.026	<0.01	<0.01%
2-METHYLNAPHTHALENE		NR	—	NR	0.060	1.09E-05	ND	—	NR	—	1.09E-05	135.026	<0.01	<0.01%
4,4'-DDT	X	NR	—	NR	1.15E-04	2.00E-08	ND	—	NR	—	2.00E-08	0.243	<0.01	<0.01%
PHENANTHRENE	X	NR	—	NR	0.024	4.25E-06	0.091	3.28E-06	NR	—	7.53E-06	135.026	<0.01	<0.01%
ACENAPHTHENE		NR	—	NR	0.027	4.94E-06	ND	—	NR	—	4.94E-06	135.026	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	0.017	3.02E-06	ND	—	NR	—	3.02E-06	74.412	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	2.38E-04	4.00E-08	ND	—	NR	—	4.00E-08	1.350	<0.01	<0.01%
ANTHRACENE		NR	—	NR	0.018	3.22E-06	ND	—	NR	—	3.22E-06	133.274	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	—	NR	0.001	1.00E-07	ND	—	NR	—	1.00E-07	13.503	<0.01	<0.01%

HAZARD INDEX 0.15

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Coyotes in the OU2 903 Pad Source Area at RFETS

COYOTES OU2 903 PAD		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU2	IR = 0.042 SUF = 0.025		IR = 0.005 SUF = 0.025			IR = 0.001 SUF = 0.025		IR = 0.077 SUF = 0.064					
CADMIUM		3.448	0.004	2.100		2.63E-04	0.920	2.30E-05	0.002	1.13E-05	0.004	0.135	0.03	22.90%
SELENIUM		3.059	0.003	2.288		2.86E-04	0.620	1.55E-05	0.008	4.01E-05	0.004	0.137	0.03	20.56%
ALUMINUM		NR	—	297.170		0.037	11886.180	0.297	5.480	0.027	0.361	20.639	0.02	13.84%
MAGNESIUM		NR	—	1426.036		0.178	3426.354	0.086	39.934	0.197	0.461	51.154	0.01	7.12%
BARIUM		NR	—	59.791		0.007	143.681	0.004	0.261	0.001	0.012	1.654	0.01	5.90%
MERCURY		ND	—	0.098		1.22E-05	0.060	1.50E-06	1.14E-04	5.60E-07	1.43E-05	0.002	0.01	5.33%
VANADIUM		NR	—	2.400		3.00E-04	35.681	0.001	0.026	1.30E-04	0.001	0.255	0.01	4.09%
COPPER		19.385	0.020	10.420		0.001	21.815	0.001	0.024	1.19E-04	0.022	5.041	<0.01	3.50%
ZINC		154.647	0.162	29.152		0.004	72.699	0.002	0.227	0.001	0.169	48.696	<0.01	2.74%
ACETONE		NR	—	NR	73.447	0.009	NR	—	0.013	6.47E-05	0.009	3.043	<0.01	2.40%
LEAD	X	5.567	0.006	1.789		2.24E-04	32.367	0.001	0.007	3.28E-05	0.007	2.435	<0.01	2.24%
ARSENIC		NR	—	ND		—	3.998	1.00E-04	0.006	2.73E-05	1.27E-04	0.063	<0.01	1.61%
ANTIMONY		NR	—	ND		—	9.800	2.45E-04	0.020	9.74E-05	3.42E-04	0.170	<0.01	1.60%
AROCLOR-1248		NR	—	NR	0.027	3.39E-06	0.211	5.28E-06	ND	—	8.67E-06	0.007	<0.01	0.94%
MANGANESE		NR	—	169.997		0.021	318.236	0.008	0.312	0.002	0.031	26.783	<0.01	0.91%
MOLYBDENUM		NR	—	5.700		0.001	3.000	7.50E-05	0.016	7.64E-05	0.001	0.768	<0.01	0.89%
NITRATE/NITRITE		NR	—	NR		—	3.106	7.77E-05	0.793	0.004	0.004	3.969	<0.01	0.79%
TOLUENE		NR	—	NR	18.926	0.002	NR	—	ND	—	0.002	3.515	<0.01	0.53%
METHYLENE CHLORIDE		NR	—	NR	5.553	0.001	NR	—	0.004	1.83E-05	0.001	1.780	<0.01	0.32%
AROCLOR-1254	X	NR	—	NR	0.033	4.15E-06	0.208	5.21E-06	0.002	9.25E-06	1.86E-05	0.059	<0.01	0.25%
LITHIUM		NR	—	1.100		1.38E-04	13.592	3.40E-04	0.071	3.48E-04	0.001	2.856	<0.01	0.23%
4 METHYL 2 PENTANONE		NR	—	NR	16.929	0.002	NR	—	ND	—	0.002	7.609	<0.01	0.22%
COBALT		NR	—	0.830		1.04E-04	7.671	1.92E-04	0.011	5.17E-05	3.47E-04	1.510	<0.01	0.18%
TIN		NR	—	3.500		4.38E-04	33.323	0.001	0.053	2.60E-04	0.002	7.551	<0.01	0.16%
BERYLLIUM		NR	—	ND		—	1.200	3.00E-05	0.001	6.20E-06	3.62E-05	0.201	<0.01	0.14%
STRONTIUM		NR	—	46.852		0.006	43.040	0.001	1.028	0.005	0.012	80.043	<0.01	0.12%
THALLIUM		NR	—	ND		—	0.430	1.08E-05	ND	—	1.08E-05	0.074	<0.01	0.11%
CHLOROFORM		NR	—	NR	3.995	4.99E-04	NR	—	0.011	5.31E-05	0.001	4.565	<0.01	0.10%
NICKEL		NR	—	4.400		0.001	26.987	0.001	0.014	6.99E-05	0.001	12.174	<0.01	0.08%
BENZO(a)PYRENE	X	NR	—	NR	0.005	5.80E-07	0.320	8.01E-06	ND	—	8.59E-06	0.135	<0.01	0.05%
SILVER		ND	—	1.300		1.63E-04	ND	—	0.005	2.22E-05	1.85E-04	6.711	<0.01	0.02%
TOTAL XYLENES		NR	—	NR	0.049	6.09E-06	NR	—	ND	—	6.09E-06	0.279	<0.01	0.02%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	0.358	4.47E-05	0.248	6.21E-06	ND	—	5.09E-05	2.480	<0.01	0.02%
TETRACHLOROETHENE		NR	—	NR	0.035	4.42E-06	NR	—	0.006	3.10E-05	3.54E-05	1.866	<0.01	0.01%
DIBENZO(a,h)ANTHRACENE		NR	—	NR	ND	—	0.092	2.30E-06	ND	—	2.30E-06	0.135	<0.01	0.01%
1,2-DICHLOROETHENE		NR	—	NR	0.022	2.70E-06	NR	—	0.011	5.64E-05	5.91E-05	6.024	<0.01	0.01%
TRICHLOROETHENE		NR	—	NR	0.937	1.17E-04	NR	—	0.012	6.03E-05	1.77E-04	19.579	<0.01	0.01%
CHROMIUM	X	4.600	0.005	5.509		0.001	26.789	0.001	0.011	5.60E-05	0.006	832.996	<0.01	0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	0.004	4.70E-07	0.334	8.35E-06	ND	—	8.82E-06	1.350	<0.01	0.01%

Summary of Ecotoxicological Risk to Coyo. in the OU2 903 Pad Source Area at RFETS

COYOTES OU2 903 PAD		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU2	IR = 0.042 SUF = 0.025		IR = 0.005 SUF = 0.025			IR = 0.001 SUF = 0.025		IR = 0.077 SUF = 0.064					
BENZO(b)FLUORANTHENE	X	NR	—	NR	0.001	1.80E-07	0.337	8.41E-06	ND	—	8.59E-06	1.350	<0.01	0.01%
BENZYL ALCOHOL		NR	—	NR	ND	—	ND	—	0.004	1.97E-05	1.97E-05	3.126	<0.01	<0.01%
PYRENE	X	NR	—	NR	0.339	4.24E-05	0.644	1.61E-05	ND	—	5.85E-05	9.996	<0.01	<0.01%
BENZO(k)FLUORANTHENE	X	NR	—	NR	ND	—	0.311	7.77E-06	ND	—	7.77E-06	1.350	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	ND	—	0.188	4.70E-06	ND	—	4.70E-06	1.350	<0.01	<0.01%
FLUORANTHENE	X	NR	—	NR	0.284	3.55E-05	0.689	1.72E-05	ND	—	5.27E-05	16.659	<0.01	<0.01%
PHENANTHRENE	X	NR	—	NR	0.716	8.95E-05	0.556	1.39E-05	ND	—	1.03E-04	135.026	<0.01	<0.01%
CHRYSENE	X	NR	—	NR	0.007	8.30E-07	0.341	8.52E-06	ND	—	9.35E-06	13.503	<0.01	<0.01%
2-BUTANONE		NR	—	NR	2.668	3.33E-04	NR	—	ND	—	3.33E-04	534.882	<0.01	<0.01%
1,1-DICHLOROETHENE		NR	—	NR	0.010	1.25E-06	NR	—	ND	—	1.25E-06	2.497	<0.01	<0.01%
BUTYL BENZYL PHTHALATE		NR	—	NR	0.035	4.35E-06	ND	—	ND	—	4.35E-06	10.686	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	—	NR	ND	—	0.191	4.78E-06	ND	—	4.78E-06	13.503	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	0.061	7.63E-06	0.353	8.83E-06	0.002	9.86E-06	2.63E-05	74.412	<0.01	<0.01%
FLUORENE		NR	—	NR	ND	—	0.190	4.74E-06	ND	—	4.74E-06	16.659	<0.01	<0.01%
ANTHRACENE		NR	—	NR	0.009	1.18E-06	0.201	5.01E-06	ND	—	6.19E-06	133.274	<0.01	<0.01%
ACENAPHTHENE		NR	—	NR	0.010	1.25E-06	0.186	4.65E-06	ND	—	5.90E-06	135.026	<0.01	<0.01%
1,1,1-TRICHLOROETHANE		NR	—	NR	0.014	1.81E-06	NR	—	ND	—	1.81E-06	142.350	<0.01	<0.01%

HAZARD INDEX 0.13

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Coyotes ... the OU1 881 Hillside Source Area at RFETS

COYOTES OU1 881 HILLSIDE		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC In OU1	IR = 0.042 SUF = 0.020		IR = 0.005 SUF = 0.020			IR = 0.001 SUF = 0.020		IR = 0.077 SUF = 0.126					
CADMIUM		5.607	0.005	1.409		1.41E-04	0.611	1.22E-05	0.002	1.56E-05	0.005	0.135	0.04	27.73%
SELENIUM		4.092	0.003	1.500		1.50E-04	0.511	1.02E-05	0.002	1.90E-05	0.004	0.137	0.03	20.34%
ALUMINUM		NR	—	NR		—	14308.320	0.286	0.926	0.009	0.295	20.639	0.01	10.99%
COPPER		72.817	0.061	9.256		0.001	35.484	0.001	0.009	9.09E-05	0.063	5.041	0.01	9.59%
ACETONE		NR	—	NR	271.965	0.027	NR	—	0.007	6.80E-05	0.027	3.043	0.01	6.88%
NITRATE/NITRITE		NR	—	NR		—	2.111	4.22E-05	2.624	0.025	0.025	3.969	0.01	4.94%
MAGNESIUM		NR	—	NR		—	3418.568	0.068	13.583	0.132	0.200	51.154	<0.01	3.01%
VANADIUM		NR	—	NR		—	41.858	0.001	0.009	8.56E-05	0.001	0.255	<0.01	2.78%
BARIUM		NR	—	NR		—	179.137	0.004	0.123	0.001	0.005	1.654	<0.01	2.22%
ZINC		151.809	0.128	28.068		0.003	85.548	0.002	0.051	4.91E-04	0.133	48.696	<0.01	2.09%
ARSENIC		NR	—	NR		—	5.377	1.08E-04	0.002	1.98E-05	1.27E-04	0.063	<0.01	1.57%
LEAD		4.542	0.004	1.100		1.10E-04	48.003	0.001	0.003	3.36E-05	0.005	2.435	<0.01	1.55%
AROCLOR-1248	X	NR	—	NR	0.082	8.20E-06	0.123	2.47E-06	ND	—	1.07E-05	0.007	<0.01	1.12%
TOLUENE	X	NR	—	NR	43.577	0.004	NR	—	0.003	2.56E-05	0.004	3.515	<0.01	0.96%
MERCURY		ND	—	ND		ND	0.054	1.08E-06	1.18E-04	1.14E-06	2.22E-06	0.002	<0.01	0.80%
ANTIMONY		NR	—	NR		—	ND	—	0.015	1.49E-04	1.49E-04	0.170	<0.01	0.67%
METHYLENE CHLORIDE		NR	—	NR	14.721	0.001	NR	—	0.004	3.67E-05	0.002	1.780	<0.01	0.65%
4-METHYL-2-PENTANONE		NR	—	NR	33.985	0.003	NR	—	ND	—	0.003	7.609	<0.01	0.34%
THALLIUM		NR	—	NR		—	0.510	1.02E-05	0.002	1.91E-05	2.93E-05	0.074	<0.01	0.30%
MOLYBDENUM		NR	—	NR		—	1.926	3.85E-05	0.018	1.70E-04	2.08E-04	0.768	<0.01	0.21%
MANGANESE		NR	—	NR		—	312.554	0.006	0.063	0.001	0.007	26.783	<0.01	0.20%
BERYLLIUM		NR	—	NR		—	1.257	2.51E-05	0.001	8.80E-06	3.39E-05	0.201	<0.01	0.13%
COBALT		NR	—	NR		—	8.343	1.67E-04	0.007	6.31E-05	2.30E-04	1.510	<0.01	0.12%
AROCLOR-1254	X	NR	—	NR	0.037	3.67E-06	0.257	5.15E-06	ND	—	8.82E-06	0.059	<0.01	0.12%
BIS(2-ETHYLHEXYL)PHTHALATE		NR	—	NR	3.395	3.40E-04	ND	—	0.002	1.94E-05	3.59E-04	2.480	<0.01	0.11%
TIN		NR	—	NR		—	43.094	0.001	0.024	2.31E-04	0.001	7.551	<0.01	0.11%
LITHIUM		NR	—	NR		—	9.473	1.89E-04	0.021	1.99E-04	3.88E-04	2.856	<0.01	0.10%
CHLOROFORM		NR	—	NR	5.967	0.001	NR	—	ND	—	0.001	4.565	<0.01	0.10%
STRONTIUM		NR	—	NR		—	61.651	0.001	0.413	0.004	0.005	80.043	<0.01	0.05%
NICKEL		NR	—	NR		—	29.863	0.001	0.008	7.37E-05	0.001	12.174	<0.01	0.04%
BENZO(a)PYRENE	X	NR	—	NR	0.006	6.30E-07	0.311	6.23E-06	ND	—	6.86E-06	0.135	<0.01	0.04%
TOTAL XYLENES	X	NR	—	NR	0.002	1.60E-07	NR	—	0.001	9.70E-06	9.86E-06	0.279	<0.01	0.03%
PYRENE	X	NR	—	NR	2.156	2.16E-04	0.693	1.39E-05	ND	—	2.29E-04	9.996	<0.01	0.02%
2-BUTANONE		NR	—	NR	119.240	0.012	NR	—	0.005	5.07E-05	0.012	534.882	<0.01	0.02%
TETRACHLOROETHENE	X	NR	—	NR	0.015	1.51E-06	NR	—	0.003	2.74E-05	2.89E-05	1.866	<0.01	0.01%
DIBENZO(a,h)ANTHRACENE	X	NR	—	NR	ND	—	0.092	1.84E-06	ND	—	1.84E-06	0.135	<0.01	0.01%
SILVER		ND	—	0.540		5.40E-05	ND	—	0.003	3.31E-05	8.71E-05	6.711	<0.01	0.01%
FLUORANTHENE	X	NR	—	NR	1.763	1.76E-04	0.762	1.52E-05	ND	—	1.92E-04	16.659	<0.01	0.01%
1,1-DICHLOROETHENE	X	NR	—	NR	0.040	4.01E-06	NR	—	0.003	2.46E-05	2.86E-05	2.497	<0.01	0.01%

Summary of Ecotoxicological Risk to Coyote.. the OU1 881 Hillside Source Area at RFETS

COYOTES OU1 881 HILLSIDE		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU1	IR = 0.042 SUF = 0.020		IR = 0.005 SUF = 0.020			IR = 0.001 SUF = 0.020		IR = 0.077 SUF = 0.126					
BENZO(a)ANTHRACENE	X	NR	—	NR	0.008	8.00E-07	0.327	6.54E-06	ND	—	7.34E-06	1.350	<0.01	<0.01%
BENZO(b)FLUORANTHENE	X	NR	—	NR	0.002	2.40E-07	0.314	6.27E-06	ND	—	6.51E-06	1.350	<0.01	<0.01%
BENZO(k)FLUORANTHENE	X	NR	—	NR	0.002	2.00E-07	0.297	5.95E-06	ND	—	6.15E-06	1.350	<0.01	<0.01%
1,2-DICHLOROETHANE	X	NR	—	NR	0.027	2.70E-06	NR	—	0.003	2.58E-05	2.85E-05	7.118	<0.01	<0.01%
PHENANTHRENE	X	NR	—	NR	4.472	4.47E-04	0.559	1.12E-05	ND	—	4.58E-04	135.026	<0.01	<0.01%
1,2-DICHLOROETHENE	X	NR	—	NR	ND	—	NR	—	0.002	1.94E-05	1.94E-05	6.024	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	ND	—	0.204	4.07E-06	ND	—	4.07E-06	1.350	<0.01	<0.01%
TRICHLOROETHENE	X	NR	—	NR	0.187	1.87E-05	NR	—	0.003	2.51E-05	4.38E-05	19.579	<0.01	<0.01%
PENTACHLOROPHENOL		NR	—	NR	0.019	1.92E-06	ND	—	ND	—	1.92E-06	0.906	<0.01	<0.01%
ALDRIN		NR	—	NR	ND	—	ND	—	1.00E-05	1.00E-07	1.00E-07	0.061	<0.01	<0.01%
CHROMIUM		ND	—	5.535		0.001	34.997	0.001	0.004	3.83E-05	0.001	832.996	<0.01	<0.01%
BENZYL ALCOHOL		NR	—	NR	ND	—	0.203	4.06E-06	ND	—	4.06E-06	3.126	<0.01	<0.01%
1,1-DICHLOROETHANE	X	NR	—	NR	ND	—	NR	—	0.003	2.44E-05	2.44E-05	34.733	<0.01	<0.01%
CHRYSENE	X	NR	—	NR	0.012	1.24E-06	0.361	7.21E-06	ND	—	8.45E-06	13.503	<0.01	<0.01%
FLUORENE	X	NR	—	NR	0.028	2.82E-06	0.193	3.86E-06	ND	—	6.68E-06	16.659	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	—	NR	ND	—	0.205	4.10E-06	ND	—	4.10E-06	13.503	<0.01	<0.01%
1,1,1-TRICHLOROETHANE	X	NR	—	NR	0.007	7.20E-07	NR	—	0.003	2.44E-05	2.51E-05	142.350	<0.01	<0.01%
DI-n-BUTYL PHTHALATE		NR	—	NR	0.056	5.57E-06	ND	—	ND	—	5.57E-06	74.412	<0.01	<0.01%
ACENAPHTHENE	X	NR	—	NR	0.040	3.97E-06	0.195	3.90E-06	ND	—	7.87E-06	135.026	<0.01	<0.01%
ANTHRACENE	X	NR	—	NR	0.027	2.70E-06	0.202	4.05E-06	ND	—	6.75E-06	133.274	<0.01	<0.01%
NAPHTHALENE	X	NR	—	NR	0.040	4.03E-06	0.110	2.20E-06	ND	—	6.23E-06	135.026	<0.01	<0.01%
DI-n-OCTYL PHTHALATE		NR	—	NR	0.009	9.10E-07	ND	—	ND	—	9.10E-07	139.384	<0.01	<0.01%

HAZARD INDEX 0.13

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Coyotes ... the OU4 Downgradient Source Area at RFETS

COYOTES OU4 DOWNGRADIENT		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU4	IR = 0.042 SUF = 0.006		IR = 0.005 SUF = 0.006			IR = 0.001 SUF = 0.006		IR = 0.077 SUF = 0.031					
MERCURY	X	0.380	9.58E-05	0.075		2.25E-06	0.107	6.40E-07	NR	—	9.87E-05	0.002	0.05	59.95%
ALUMINUM		614.000	0.155	413.229		0.012	12856.399	0.077	NR	—	0.244	20.639	0.01	15.25%
MAGNESIUM		1430.000	0.360	2057.159		0.062	2871.518	0.017	NR	—	0.439	51.154	0.01	11.07%
BARIUM		10.300	0.003	56.333		0.002	165.692	0.001	NR	—	0.005	1.654	<0.01	4.11%
COPPER		27.500	0.007	25.140		0.001	16.143	9.69E-05	NR	—	0.008	5.041	<0.01	1.99%
VANADIUM		ND	—	3.100		9.30E-05	35.665	2.14E-04	NR	—	3.07E-04	0.255	<0.01	1.55%
ARSENIC		ND	—	1.100		3.30E-05	4.565	2.74E-05	NR	—	6.04E-05	0.063	<0.01	1.25%
SELENIUM		ND	—	3.643		1.09E-04	ND	—	NR	—	1.09E-04	0.137	<0.01	1.03%
ZINC		109.000	0.027	42.863		0.001	74.594	4.48E-04	NR	—	0.029	48.696	<0.01	0.77%
BERYLLIUM	X	0.290	7.31E-05	0.500		1.50E-05	ND	—	NR	—	8.81E-05	0.201	<0.01	0.57%
LITHIUM		ND	—	33.600		0.001	9.207	5.52E-05	NR	—	0.001	2.856	<0.01	0.48%
CADMIUM	X	ND	—	1.400		4.20E-05	1.109	6.65E-06	NR	—	4.87E-05	0.135	<0.01	0.46%
MANGANESE		17.700	0.004	51.289		0.002	337.070	0.002	NR	—	0.008	26.783	<0.01	0.39%
MOLYBDENUM		ND	—	7.200		2.16E-04	ND	—	NR	—	2.16E-04	0.768	<0.01	0.36%
TIN		5.900	0.001	8.500		2.55E-04	38.477	2.31E-04	NR	—	0.002	7.551	<0.01	0.34%
STRONTIUM		29.000	0.007	78.059		0.002	52.509	3.15E-04	NR	—	0.010	80.043	<0.01	0.16%
LEAD		ND	—	1.745		5.24E-05	20.053	1.20E-04	NR	—	1.73E-04	2.435	<0.01	0.09%
THALLIUM		ND	—	ND		—	0.630	3.78E-06	NR	—	3.78E-06	0.074	<0.01	0.07%
COBALT		ND	—	ND		—	8.238	4.94E-05	NR	—	4.94E-05	1.510	<0.01	0.04%
NICKEL		ND	—	6.800		2.04E-04	14.767	8.86E-05	NR	—	2.93E-04	12.174	<0.01	0.03%
ACETONE		NR	—	NR	1.085	3.25E-05	NR	—	NR	—	3.25E-05	3.043	<0.01	0.01%
BENZO(a)PYRENE	X	NR	—	NR	NR	—	0.200	1.20E-06	NR	—	1.20E-06	0.135	<0.01	0.01%
NITRATE/NITRITE	X	NR	—	NR		—	3.975	2.39E-05	NR	—	2.39E-05	3.969	<0.01	0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	NR	—	0.978	5.87E-06	NR	—	5.87E-06	2.480	<0.01	<0.01%
DIBENZO(a,h)ANTHRACENE		NR	—	NR	NR	—	0.047	2.80E-07	NR	—	2.80E-07	0.135	<0.01	<0.01%
TOLUENE		NR	—	NR	0.232	6.97E-06	NR	—	NR	—	6.97E-06	3.515	<0.01	<0.01%
METHYLENE CHLORIDE		NR	—	NR	0.078	2.34E-06	NR	—	NR	—	2.34E-06	1.780	<0.01	<0.01%
BENZO(b)FLUORANTHENE	X	NR	—	NR	NR	—	0.182	1.09E-06	NR	—	1.09E-06	1.350	<0.01	<0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	NR	—	0.160	9.60E-07	NR	—	9.60E-07	1.350	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	NR	—	0.150	9.00E-07	NR	—	9.00E-07	1.350	<0.01	<0.01%
BENZO(k)FLUORANTHENE	X	NR	—	NR	NR	—	0.130	7.80E-07	NR	—	7.80E-07	1.350	<0.01	<0.01%
CHROMIUM		ND	—	1.400		4.20E-05	14.049	8.43E-05	NR	—	1.26E-04	832.996	<0.01	<0.01%
PYRENE	X	NR	—	NR	NR	—	0.191	1.15E-06	NR	—	1.15E-06	9.996	<0.01	<0.01%
BUTYL BENZYL PHTHALATE		NR	—	NR	NR	—	0.170	1.02E-06	NR	—	1.02E-06	10.686	<0.01	<0.01%
CHRYSENE	X	NR	—	NR	NR	—	0.220	1.32E-06	NR	—	1.32E-06	13.503	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	—	NR	NR	—	0.170	1.02E-06	NR	—	1.02E-06	13.503	<0.01	<0.01%
FLUORANTHENE	X	NR	—	NR	NR	—	0.183	1.10E-06	NR	—	1.10E-06	16.659	<0.01	<0.01%
TETRACHLOROETHENE		NR	—	NR	0.002	5.00E-08	NR	—	NR	—	5.00E-08	1.866	<0.01	<0.01%

Summary of Ecotoxicological Risk to Coyotes the OU4 Downgradient Source Area at RFETS

COYOTES OU4 DOWNGRADIENT		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU4	IR = 0.042 SUF = 0.006		IR = 0.005 SUF = 0.006			IR = 0.001 SUF = 0.006		IR = 0.077 SUF = 0.031					
DI-n-BUTYL PHTHALATE	X	NR	—	NR	NR	—	0.079	4.70E-07	NR	—	4.70E-07	74.412	<0.01	<0.01%
DI-n-OCTYL PHTHALATE		NR	—	NR	NR	—	0.295	1.77E-06	NR	—	1.77E-06	139.384	<0.01	<0.01%
PHENANTHRENE	X	NR	—	NR	NR	—	0.074	4.40E-07	NR	—	4.40E-07	135.026	<0.01	<0.01%

HAZARD INDEX 0.08

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Coyotes in the OU5 Ash Pits Source Area at RFETS

COYOTES OU5 ASH PITS		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU5	IR = 0.042 SUF = 0.017		IR = 0.005 SUF = 0.017			IR = 0.001 SUF = 0.017		IR = 0.077 SUF = 0.061					
ALUMINUM		413.418	0.295	264.435		0.022	13038.844	0.222	0.855	0.004	0.543	20.639	0.03	37.55%
MAGNESIUM		776.812	0.555	1466.885		0.125	2929.961	0.050	6.862	0.032	0.761	51.154	0.01	21.23%
BARIUM	X	9.863	0.007	66.746		0.006	143.888	0.002	0.071	3.31E-04	0.015	1.654	0.01	13.36%
MERCURY	X	ND	—	0.073		6.21E-06	0.078	1.32E-06	1.10E-04	5.20E-07	8.05E-06	0.002	<0.01	5.41%
VANADIUM		ND	—	2.300		1.96E-04	36.213	0.001	0.009	4.04E-05	0.001	0.255	<0.01	4.76%
COPPER	X	21.419	0.015	7.604		0.001	16.938	2.88E-04	0.006	2.65E-05	0.016	5.041	<0.01	4.60%
ARSENIC		ND	—	0.840		7.14E-05	5.715	9.72E-05	0.002	9.80E-06	1.78E-04	0.063	<0.01	4.07%
CADMIUM		ND	—	2.179		1.85E-04	1.349	2.29E-05	0.001	4.70E-06	2.13E-04	0.135	<0.01	2.25%
ZINC	X	78.515	0.056	29.216		0.002	69.631	0.001	0.018	8.42E-05	0.060	48.696	<0.01	1.75%
LEAD	X	2.692	0.002	1.581		1.34E-04	33.783	0.001	0.004	1.78E-05	0.003	2.435	<0.01	1.55%
MANGANESE		11.936	0.009	42.730		0.004	337.520	0.006	0.148	0.001	0.019	26.783	<0.01	0.99%
ANTIMONY	X	ND	—	ND		—	ND	—	0.015	7.22E-05	7.22E-05	0.170	<0.01	0.61%
STRONTIUM	X	20.606	0.015	45.069		0.004	38.768	0.001	0.247	0.001	0.020	80.043	<0.01	0.36%
BERYLLIUM		ND	—	0.084		7.14E-06	0.940	1.60E-05	0.001	6.43E-06	2.96E-05	0.201	<0.01	0.21%
MOLYBDENUM		ND	—	ND		—	0.928	1.58E-05	0.020	9.26E-05	1.08E-04	0.768	<0.01	0.20%
NICKEL		ND	—	14.803		0.001	13.578	2.31E-04	0.009	4.09E-05	0.002	12.174	<0.01	0.18%
THALLIUM		ND	—	ND		—	0.520	8.84E-06	ND	—	8.84E-06	0.074	<0.01	0.17%
COBALT	X	ND	—	ND		—	8.402	1.43E-04	0.007	3.45E-05	1.77E-04	1.510	<0.01	0.17%
NITRATE/NITRITE		NR	—	NR		—	NR	—	0.088	4.15E-04	4.15E-04	3.969	<0.01	0.15%
SELENIUM		ND	—	ND		—	0.410	6.97E-06	0.001	5.17E-06	1.21E-05	0.137	<0.01	0.13%
TIN		ND	—	3.200		2.72E-04	16.661	2.83E-04	0.019	8.88E-05	0.001	7.551	<0.01	0.12%
LITHIUM	X	ND	—	ND		—	10.380	1.76E-04	0.009	4.09E-05	2.17E-04	2.856	<0.01	0.11%
SILVER	X	ND	—	0.970		8.25E-05	1.807	3.07E-05	0.003	1.51E-05	1.28E-04	6.711	<0.01	0.03%
ACETONE		NR	—	NR	NR	—	NR	—	0.009	4.21E-05	4.21E-05	3.043	<0.01	0.02%
METHYLENE CHLORIDE	X	NR	—	NR	NR	—	NR	—	0.005	2.23E-05	2.23E-05	1.780	<0.01	0.02%
1,2-DICHLOROETHANE		NR	—	NR	NR	—	NR	—	0.003	1.44E-05	1.44E-05	7.118	<0.01	<0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	NR	—	NR	—	0.001	4.70E-06	4.70E-06	2.480	<0.01	<0.01%
CHROMIUM		ND	—	1.900		1.62E-04	15.956	2.71E-04	0.004	1.83E-05	4.51E-04	832.996	<0.01	<0.01%

HAZARD INDEX 0.07

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Coyotes in the OU7 Downgradient Areas Source Area at RFETS

COYOTES OU7 DOWNGRADIENT AREAS		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU7	IR = 0.042 SUF = 0.002		IR = 0.005 SUF = 0.002			IR = 0.001 SUF = 0.002		IR = I SUF = I					
SELENIUM	X	26.500	0.002	4.398		4.40E-05	NR	—	0.007	—	0.002	0.137	0.02	25.16%
MERCURY		0.300	2.52E-05	ND		—	NR	—	1.15E-04	—	2.52E-05	0.002	0.01	17.99%
CADMIUM		18.700	0.002	1.600		1.60E-05	NR	—	0.002	—	0.002	0.135	0.01	17.77%
MAGNESIUM	X	4680.000	0.393	2549.843		0.025	NR	—	25.696	—	0.419	51.154	0.01	12.39%
VANADIUM	X	14.100	0.001	1.300		1.30E-05	NR	—	0.007	—	0.001	0.255	<0.01	7.10%
BARIUM	X	67.100	0.006	52.799		0.001	NR	—	0.189	—	0.006	1.654	<0.01	5.64%
ALUMINUM	X	624.000	0.052	212.406		0.002	NR	—	0.403	—	0.055	20.639	<0.01	4.00%
LEAD	X	55.600	0.005	1.532		1.53E-05	NR	—	0.009	—	0.005	2.435	<0.01	2.91%
COPPER	X	106.000	0.009	42.778		4.28E-04	NR	—	0.009	—	0.009	5.041	<0.01	2.80%
ZINC	X	746.000	0.063	32.779		3.28E-04	NR	—	0.055	—	0.063	48.696	<0.01	1.96%
TIN	X	52.700	0.004	3.200		3.20E-05	NR	—	0.030	—	0.004	7.551	<0.01	0.89%
SILVER		24.400	0.002	ND		—	NR	—	ND	—	0.002	6.711	<0.01	0.46%
MANGANESE	X	64.400	0.005	18.571		1.86E-04	NR	—	0.084	—	0.006	26.783	<0.01	0.32%
STRONTIUM	X	118.000	0.010	91.649		0.001	NR	—	0.774	—	0.011	80.043	<0.01	0.20%
ARSENIC	X	ND	—	0.700		7.00E-06	NR	—	0.003	—	7.00E-06	0.063	<0.01	0.17%
BERYLLIUM	X	ND	—	1.100		1.10E-05	NR	—	ND	—	1.10E-05	0.201	<0.01	0.08%
MOLYBDENUM	X	ND	—	3.500		3.50E-05	NR	—	0.004	—	3.50E-05	0.768	<0.01	0.07%
LITHIUM	X	ND	—	10.900		1.09E-04	NR	—	0.020	—	1.09E-04	2.856	<0.01	0.06%
NICKEL	X	ND	—	14.300		1.43E-04	NR	—	0.010	—	1.43E-04	12.174	<0.01	0.02%
NITRATE/NITRITE	X	NR	—	NR		—	10.779	2.16E-05	1.056	—	2.16E-05	3.969	<0.01	0.01%
CHROMIUM	X	29.700	0.002	7.413		7.41E-05	NR	—	ND	—	0.003	832.996	<0.01	<0.01%
TOLUENE	X	NR	—	NR	0.862	8.62E-06	NR	—	0.008	—	8.62E-06	3.515	<0.01	<0.01%
4-METHYL-2-PENTANONE		NR	—	NR	0.131	1.31E-06	NR	—	ND	—	1.31E-06	7.609	<0.01	<0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	0.014	1.40E-07	NR	—	0.002	—	1.40E-07	2.480	<0.01	<0.01%
TOTAL XYLENES		NR	—	NR	0.001	1.00E-08	NR	—	0.004	—	1.00E-08	0.279	<0.01	<0.01%
BUTYL BENZYL PHTHALATE		NR	—	NR	0.020	2.00E-07	NR	—	ND	—	2.00E-07	10.686	<0.01	<0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	0.001	1.00E-08	NR	—	ND	—	1.00E-08	1.350	<0.01	<0.01%
PYRENE	X	NR	—	NR	0.005	5.00E-08	NR	—	ND	—	5.00E-08	9.996	<0.01	<0.01%
FLUORANTHENE	X	NR	—	NR	0.004	4.00E-08	NR	—	ND	—	4.00E-08	16.659	<0.01	<0.01%
CHRYSENE	X	NR	—	NR	0.001	1.00E-08	NR	—	ND	—	1.00E-08	13.503	<0.01	<0.01%
PHENANTHRENE	X	NR	—	NR	0.009	9.00E-08	NR	—	ND	—	9.00E-08	135.026	<0.01	<0.01%
1,1,1-TRICHLOROETHANE		NR	—	NR	0.003	3.00E-08	NR	—	ND	—	3.00E-08	142.350	<0.01	<0.01%

HAZARD INDEX 0.07

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor

I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Coyotes at the OU5 Old Landfill Source Area at RFETS

COYOTES OU5 OLD LANDFILL		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU5	IR = 0.042 SUF = 0.012		IR = 0.005 SUF = 0.012			IR = 0.001 SUF = 0.012		IR = 0.077 SUF = 0.093					
ALUMINUM		431.427	0.217	199.127		0.012	11074.656	0.133	1.471	0.011	0.373	20.639	0.02	29.89%
MAGNESIUM		967.466	0.488	2448.896		0.147	2298.534	0.028	19.837	0.142	0.804	51.154	0.02	26.01%
BARIUM	X	10.068	0.005	66.461		0.004	115.593	0.001	0.162	0.001	0.012	1.654	0.01	11.61%
COPPER	X	31.629	0.016	7.863		4.72E-04	37.703	4.52E-04	0.006	4.06E-05	0.017	5.041	<0.01	5.55%
NITRATE/NITRITE		NR	—	NR		—	NR	—	1.490	0.011	0.011	3.969	<0.01	4.45%
VANADIUM		ND	—	1.400		8.40E-05	30.425	3.65E-04	0.008	5.86E-05	0.001	0.255	<0.01	3.29%
ARSENIC		ND	—	0.590		3.54E-05	5.702	6.84E-05	0.002	1.53E-05	1.19E-04	0.063	<0.01	3.15%
ZINC	X	130.097	0.066	44.205		0.003	66.571	0.001	0.022	1.60E-04	0.069	48.696	<0.01	2.35%
ANTIMONY	X	ND	—	ND		—	8.677	1.04E-04	0.015	1.09E-04	2.13E-04	0.170	<0.01	2.08%
LEAD	X	4.363	0.002	1.683		1.01E-04	28.695	3.44E-04	0.004	2.87E-05	0.003	2.435	<0.01	1.82%
MERCURY	X	ND	—	ND		—	0.124	1.49E-06	1.11E-04	7.90E-07	2.28E-06	0.002	<0.01	1.78%
CADMIUM		ND	—	1.900		1.14E-04	0.880	1.06E-05	0.002	1.15E-05	1.36E-04	0.135	<0.01	1.66%
MOLYBDENUM		ND	—	8.700		0.001	4.400	5.28E-05	0.004	3.15E-05	0.001	0.768	<0.01	1.31%
SELENIUM		ND	—	1.400		8.40E-05	0.459	5.51E-06	0.003	1.81E-05	1.08E-04	0.137	<0.01	1.30%
MANGANESE		8.234	0.004	47.237		0.003	277.661	0.003	0.061	4.40E-04	0.011	26.783	<0.01	0.66%
STRONTIUM	X	29.983	0.015	79.000		0.005	30.813	3.70E-04	0.484	0.003	0.024	80.043	<0.01	0.49%
NICKEL		4.800	0.002	8.000		4.80E-04	14.939	1.79E-04	0.009	6.75E-05	0.003	12.174	<0.01	0.43%
BENZO(a)PYRENE	X	NR	—	NR	0.030	1.81E-06	2.636	3.16E-05	ND	—	3.34E-05	0.135	<0.01	0.41%
THALLIUM		ND	—	ND		—	0.310	3.72E-06	0.002	1.42E-05	1.79E-05	0.074	<0.01	0.40%
AROCLOR 1254	X	NR	—	NR	0.001	9.00E-08	0.572	6.87E-06	ND	—	6.96E-06	0.059	<0.01	0.20%
LITHIUM	X	ND	—	1.100		6.60E-05	8.005	9.61E-05	0.013	9.22E-05	2.54E-04	2.856	<0.01	0.15%
BERYLLIUM		ND	—	ND		—	0.882	1.06E-05	0.001	6.79E-06	1.74E-05	0.201	<0.01	0.14%
ACETONE		NR	—	NR	1.397	8.38E-05	ND	—	0.022	1.59E-04	2.43E-04	3.043	<0.01	0.13%
COBALT	X	ND	—	ND		—	8.348	1.00E-04	0.002	1.43E-05	1.14E-04	1.510	<0.01	0.13%
DIBENZO(a,h)ANTHRACENE	X	NR	—	NR	0.003	1.90E-07	0.758	9.10E-06	ND	—	9.29E-06	0.135	<0.01	0.11%
TIN		ND	—	2.100		1.26E-04	9.714	1.17E-04	0.021	1.50E-04	3.93E-04	7.551	<0.01	0.09%
PENTACHLOROPHENOL	X	NR	—	NR	0.008	4.70E-07	ND	—	0.005	3.58E-05	3.63E-05	0.906	<0.01	0.07%
BENZO(b)FLUORANTHENE	X	NR	—	NR	0.016	9.50E-07	3.179	3.82E-05	ND	—	3.91E-05	1.350	<0.01	0.05%
BENZO(a)ANTHRACENE	X	NR	—	NR	0.038	2.27E-06	2.850	3.42E-05	ND	—	3.65E-05	1.350	<0.01	0.04%
SILVER	X	ND	—	1.000		6.00E-05	7.180	8.62E-05	0.003	2.50E-05	1.71E-04	6.711	<0.01	0.04%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	0.001	7.00E-08	2.572	3.09E-05	ND	—	3.09E-05	1.350	<0.01	0.04%
DIELDRIN	X	NR	—	NR	ND	—	0.009	1.10E-07	ND	—	1.10E-07	0.006	<0.01	0.03%
ENDRIN KETONE	X	NR	—	NR	NO LOG K_{OW}	—	0.009	1.10E-07	ND	—	1.10E-07	0.007	<0.01	0.03%
BENZO(k)FLUORANTHENE	X	NR	—	NR	0.005	2.80E-07	1.694	2.03E-05	ND	—	2.06E-05	1.350	<0.01	0.03%
METHYLENE CHLORIDE	X	NR	—	NR	0.042	2.49E-06	ND	—	0.003	2.19E-05	2.44E-05	1.780	<0.01	0.02%
PYRENE	X	NR	—	NR	0.201	1.21E-05	7.090	8.51E-05	ND	—	9.72E-05	9.996	<0.01	0.02%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	0.023	1.38E-06	0.210	2.52E-06	0.002	1.43E-05	1.82E-05	2.480	<0.01	0.01%
FLUORANTHENE	X	NR	—	NR	0.208	1.25E-05	8.267	9.92E-05	ND	—	1.12E-04	16.659	<0.01	0.01%
CHLOROFORM		NR	—	NR	ND	—	ND	—	0.003	1.82E-05	1.82E-05	4.565	<0.01	0.01%
CHRYSENE	X	NR	—	NR	0.061	3.64E-06	2.987	3.58E-05	ND	—	3.95E-05	13.503	<0.01	<0.01%
FLUORENE	X	NR	—	NR	0.268	1.61E-05	2.363	2.84E-05	ND	—	4.44E-05	16.659	<0.01	<0.01%

Summary of Ecotoxicological Risk to Coyotes in the OU5 Old Landfill Source Area at RFETS

COYOTES OU5 OLD LANDFILL		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU5	IR = 0.042 SUF = 0.012		IR = 0.005 SUF = 0.012			IR = 0.001 SUF = 0.012		IR = 0.077 SUF = 0.093					
PHENOL	X	NR	—	NR	0.777	4.66E-05	ND	—	ND	—	4.66E-05	18.121	<0.01	<0.01%
PHENANTHRENE	X	NR	—	NR	0.610	3.66E-05	9.640	1.16E-04	ND	—	1.52E-04	135.026	<0.01	<0.01%
TRICHLOROETHENE		NR	—	NR	0.019	1.12E-06	ND	—	0.003	2.06E-05	2.17E-05	19.579	<0.01	<0.01%
ENDOSULFAN SULFATE	X	NR	—	NR	ND	—	0.009	1.10E-07	ND	—	1.10E-07	0.104	<0.01	<0.01%
HEPTACHLOR EPOXIDE	X	NR	—	NR	0.001	8.00E-08	0.004	5.00E-08	ND	—	1.30E-07	0.125	<0.01	<0.01%
ALDRIN	X	NR	—	NR	ND	—	0.005	6.00E-08	ND	—	6.00E-08	0.061	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	—	NR	0.002	1.40E-07	0.922	1.11E-05	ND	—	1.12E-05	13.503	<0.01	<0.01%
NAPHTHALENE	X	NR	—	NR	1.297	7.78E-05	2.498	3.00E-05	ND	—	1.08E-04	135.026	<0.01	<0.01%
TOTAL XYLENES		NR	—	NR	0.003	2.00E-07	ND	—	ND	—	2.00E-07	0.279	<0.01	<0.01%
METHOXYCHLOR	X	NR	—	NR	ND	—	0.060	7.20E-07	ND	—	7.20E-07	1.208	<0.01	<0.01%
CHROMIUM		ND	—	3.600		2.16E-04	13.088	1.57E-04	0.004	3.06E-05	4.04E-04	832.996	<0.01	<0.01%
TOLUENE	X	NR	—	NR	0.027	1.60E-06	ND	—	ND	—	1.60E-06	3.515	<0.01	<0.01%
TETRACHLOROETHENE		NR	—	NR	0.013	7.80E-07	ND	—	ND	—	7.80E-07	1.866	<0.01	<0.01%
4,4'-DDT	X	NR	—	NR	ND	—	0.009	1.00E-07	ND	—	1.00E-07	0.243	<0.01	<0.01%
BUTYL BENZYL PHTHALATE	X	NR	—	NR	0.024	1.44E-06	0.220	2.64E-06	ND	—	4.08E-06	10.686	<0.01	<0.01%
ANTHRACENE	X	NR	—	NR	0.243	1.46E-05	2.816	3.38E-05	ND	—	4.84E-05	133.274	<0.01	<0.01%
ACENAPHTHENE	X	NR	—	NR	0.258	1.55E-05	2.636	3.16E-05	ND	—	4.71E-05	135.026	<0.01	<0.01%
2-METHYLNAPHTHALENE	X	NR	—	NR	0.141	8.48E-06	0.944	1.13E-05	ND	—	1.98E-05	135.026	<0.01	<0.01%
4-METHYL-2-PENTANONE		NR	—	NR	0.018	1.09E-06	ND	—	ND	—	1.09E-06	7.609	<0.01	<0.01%
ISOPHORONE	X	NR	—	NR	0.344	2.06E-05	ND	—	ND	—	2.06E-05	149.804	<0.01	<0.01%
2-BUTANONE		NR	—	NR	0.234	1.41E-05	ND	—	0.006	4.03E-05	5.44E-05	534.882	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	0.027	1.59E-06	0.200	2.40E-06	ND	—	3.99E-06	74.412	<0.01	<0.01%
AROCLOR-1260		NR	—	NR	0.001	4.00E-08	ND	—	ND	—	4.00E-08	2.084	<0.01	<0.01%
DI-n-OCTYL PHTHALATE	X	NR	—	NR	ND	—	0.083	1.00E-06	ND	—	1.00E-06	139.384	<0.01	<0.01%
1,1,1-TRICHLOROETHANE		NR	—	NR	0.003	1.70E-07	ND	—	ND	—	1.70E-07	142.350	<0.01	<0.01%

HAZARD INDEX 0.06

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Coyotes in the OU5 C-Ponds Source Area at RFETS

COYOTES OU5 C-PONDS		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU5	IR = 0.042 SUF = 0.010		IR = 0.005 SUF = 0.010			IR = 0.001 SUF = 0.010		IR = 0.077 SUF = 0.192					
SELENIUM		7.964	0.003	ND		—	0.510	5.10E-06	0.002	2.74E-05	0.003	0.137	0.02	38.14%
CADMIUM		3.375	0.001	1.500		7.50E-05	ND	—	0.003	3.83E-05	0.002	0.135	0.01	17.46%
ALUMINUM		NR	—	NR		—	13000.000	0.130	2.432	0.036	0.166	20.639	0.01	12.40%
MAGNESIUM		NR	—	NR		—	2860.000	0.029	10.768	0.159	0.188	51.154	<0.01	5.66%
ZINC	X	331.676	0.139	41.397		0.002	56.700	0.001	0.048	0.001	0.143	48.696	<0.01	4.52%
VANADIUM		NR	—	NR		—	34.700	3.47E-04	0.012	1.71E-04	0.001	0.255	<0.01	3.13%
NITRATE/NITRITE		NR	—	NR		—	NR	—	0.541	0.008	0.008	3.969	<0.01	3.11%
COPPER	X	21.044	0.009	8.926		4.46E-04	10.200	1.02E-04	0.008	1.18E-04	0.010	5.041	<0.01	2.91%
BARIUM	X	NR	—	NR		—	144.000	0.001	0.109	0.002	0.003	1.654	<0.01	2.85%
ANTIMONY	X	NR	—	NR		—	ND	—	0.015	2.27E-04	2.27E-04	0.170	<0.01	2.07%
LEAD	X	6.573	0.003	1.355		6.78E-05	26.100	2.61E-04	0.006	9.33E-05	0.003	2.435	<0.01	2.02%
ARSENIC		NR	—	NR		—	3.500	3.50E-05	0.002	3.29E-05	6.79E-05	0.063	<0.01	1.68%
MERCURY	X	ND	—	ND		—	ND	—	1.41E-04	2.08E-06	2.08E-06	0.002	<0.01	1.51%
THALLIUM		NR	—	NR		—	ND	—	0.002	3.45E-05	3.45E-05	0.074	<0.01	0.72%
MOLYBDENUM		NR	—	NR		—	ND	—	0.017	2.45E-04	2.45E-04	0.768	<0.01	0.49%
MANGANESE		NR	—	NR		—	360.000	0.004	0.120	0.002	0.005	26.783	<0.01	0.31%
LITHIUM	X	NR	—	NR		—	10.700	1.07E-04	0.020	2.96E-04	4.03E-04	2.856	<0.01	0.22%
COBALT	X	NR	—	NR		—	7.900	7.90E-05	0.008	1.17E-04	1.96E-04	1.510	<0.01	0.20%
TIN		NR	—	NR		—	32.700	3.27E-04	0.021	3.17E-04	0.001	7.551	<0.01	0.13%
ACETONE		NR	—	NR	0.266	1.33E-05	NR	—	0.014	2.14E-04	2.27E-04	3.043	<0.01	0.12%
BERYLLIUM		NR	—	NR		—	ND	—	0.001	1.48E-05	1.48E-05	0.201	<0.01	0.11%
STRONTIUM	X	NR	—	NR		—	41.700	4.17E-04	0.337	0.005	0.005	80.043	<0.01	0.10%
METHYLENE CHLORIDE	X	NR	—	NR	0.027	1.37E-06	NR	—	0.004	5.42E-05	5.56E-05	1.780	<0.01	0.05%
NICKEL		NR	—	NR		—	13.800	1.38E-04	0.009	1.28E-04	2.66E-04	12.174	<0.01	0.03%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	ND	—	ND	—	0.002	2.96E-05	2.96E-05	2.480	<0.01	0.02%
CHLOROFORM		NR	—	NR	ND	—	NR	—	0.003	3.80E-05	3.80E-05	4.565	<0.01	0.01%
SILVER	X	ND	—	ND		—	ND	—	0.004	5.32E-05	5.32E-05	6.711	<0.01	0.01%
TOLUENE	X	NR	—	NR	0.020	1.02E-06	NR	—	0.001	1.48E-05	1.58E-05	3.515	<0.01	0.01%
CHROMIUM		3.400	0.001	10.957		0.001	14.800	1.48E-04	0.005	7.04E-05	0.002	832.996	<0.01	<0.01%
2-BUTANONE		NR	—	NR	ND	—	NR	—	0.006	8.58E-05	8.58E-05	534.882	<0.01	<0.01%
PYRENE	X	NR	—	NR	ND	—	0.094	9.40E-07	ND	—	9.40E-07	9.996	<0.01	<0.01%
FLUORANTHENE	X	NR	—	NR	ND	—	0.078	7.80E-07	ND	—	7.80E-07	16.659	<0.01	<0.01%

HAZARD INDEX 0.06

Notes:

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PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor

I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Coyotes in the OU11 West Spray Field Source Area at RFETS

COYOTES OU11 WEST SPRAY FIELD		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU11	IR = NR SUF = 0.041		IR = 0.047 SUF = 0.041			IR = 0.001 SUF = 0.041		IR = I SUF = I					
ALUMINUM		NR	—	NR		—	12185.807	0.500	NR	—	0.500	20.639	0.02	56.40%
ARSENIC		NR	—	NR		—	8.032	3.29E-04	NR	—	3.29E-04	0.063	0.01	12.28%
VANADIUM		NR	—	NR		—	30.669	0.001	NR	—	0.001	0.255	<0.01	11.47%
BARIUM		NR	—	NR		—	130.524	0.005	NR	—	0.005	1.654	<0.01	7.54%
MAGNESIUM		NR	—	NR		—	1746.670	0.072	NR	—	0.072	51.154	<0.01	3.26%
ANTIMONY		NR	—	NR		—	3.500	1.44E-04	NR	—	1.44E-04	0.170	<0.01	1.97%
LEAD		NR	—	NR		—	46.092	0.002	NR	—	0.002	2.435	<0.01	1.81%
MANGANESE		NR	—	NR		—	332.865	0.014	NR	—	0.014	26.783	<0.01	1.19%
CADMIUM		NR	—	NR		—	0.737	3.02E-05	NR	—	3.02E-05	0.135	<0.01	0.52%
ACETONE		NR	—	NR	0.296	0.001	NR	—	NR	—	0.001	3.043	<0.01	0.44%
COBALT		NR	—	NR		—	6.719	2.75E-04	NR	—	2.75E-04	1.510	<0.01	0.43%
NITRATE/NITRITE		NR	—	NR		—	15.866	0.001	NR	—	0.001	3.969	<0.01	0.38%
SELENIUM		NR	—	NR		—	0.509	2.09E-05	NR	—	2.09E-05	0.137	<0.01	0.36%
THALLIUM		NR	—	NR		—	0.270	1.11E-05	NR	—	1.11E-05	0.074	<0.01	0.35%
LITHIUM		NR	—	NR		—	10.111	4.15E-04	NR	—	4.15E-04	2.856	<0.01	0.34%
BERYLLIUM		NR	—	NR		—	0.682	2.80E-05	NR	—	2.80E-05	0.201	<0.01	0.32%
MOLYBDENUM		NR	—	NR		—	2.600	1.07E-04	NR	—	1.07E-04	0.768	<0.01	0.32%
COPPER		NR	—	NR		—	13.023	0.001	NR	—	0.001	5.041	<0.01	0.25%
ZINC		NR	—	NR		—	44.730	0.002	NR	—	0.002	48.696	<0.01	0.09%
METHYLENE CHLORIDE		NR	—	NR	0.034	6.51E-05	NR	—	NR	—	6.51E-05	1.780	<0.01	0.09%
NICKEL		NR	—	NR		—	9.190	3.77E-04	NR	—	3.77E-04	12.174	<0.01	0.07%
TIN		NR	—	NR		—	4.900	2.01E-04	NR	—	2.01E-04	7.551	<0.01	0.06%
STRONTIUM		NR	—	NR		—	23.573	0.001	NR	—	0.001	80.043	<0.01	0.03%
BIS(2-ETHYLHEXYL)PHTHALATE		NR	—	NR	0.011	2.14E-05	NR	—	NR	—	2.14E-05	2.480	<0.01	0.02%
CHLOROFORM		NR	—	NR	0.017	3.19E-05	NR	—	NR	—	3.19E-05	4.565	<0.01	0.02%
TOLUENE		NR	—	NR	0.004	7.39E-06	NR	—	NR	—	7.39E-06	3.515	<0.01	<0.01%
CHROMIUM		NR	—	NR		—	13.479	0.001	NR	—	0.001	832.996	<0.01	<0.01%
DI-n-BUTYL PHTHALATE		NR	—	NR	0.019	3.65E-05	NR	—	NR	—	3.65E-05	74.412	<0.01	<0.01%
2-BUTANONE		NR	—	NR	0.107	2.06E-04	NR	—	NR	—	2.06E-04	534.882	<0.01	<0.01%
TRICHLOROETHENE		NR	—	NR	0.004	6.90E-06	NR	—	NR	—	6.90E-06	19.579	<0.01	<0.01%

HAZARD INDEX 0.04

Notes:

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ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Coyotes in ...e OU6 North Spray Field Source Area at RFETS

COYOTES OU6 NORTH SPRAY FIELD		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU6	IR = NR SUF = 0.004		IR = 0.047 SUF = 0.004			IR = 0.001 SUF = 0.004		IR = I SUF = I					
MAGNESIUM	X	NR	—	4253.480		0.800	2397.398	0.010	NR	—	0.809	51.154	0.02	41.74%
BARIUM	X	NR	—	83.888		0.016	170.910	0.001	NR	—	0.016	1.654	0.01	26.24%
ALUMINUM		NR	—	347.535		0.065	11820.163	0.047	NR	—	0.113	20.639	0.01	14.40%
CADMIUM		NR	—	1.400		2.63E-04	0.990	3.96E-06	NR	—	2.67E-04	0.135	<0.01	5.21%
VANADIUM	X	NR	—	1.300		2.44E-04	33.599	1.34E-04	NR	—	3.79E-04	0.255	<0.01	3.91%
THALLIUM		NR	—	0.450		8.46E-05	0.340	1.36E-06	NR	—	8.60E-05	0.074	<0.01	3.06%
ARSENIC	X	NR	—	ND		—	6.579	2.63E-05	NR	—	2.63E-05	0.063	<0.01	1.11%
ANTIMONY	X	NR	—	ND		—	16.765	6.71E-05	NR	—	6.71E-05	0.170	<0.01	1.04%
MANGANESE	X	NR	—	35.254		0.007	315.526	0.001	NR	—	0.008	26.783	<0.01	0.78%
COPPER	X	NR	—	6.541		0.001	13.985	5.59E-05	NR	—	0.001	5.041	<0.01	0.67%
LEAD	X	NR	—	1.764		3.32E-04	40.050	1.60E-04	NR	—	4.92E-04	2.435	<0.01	0.53%
STRONTIUM	X	NR	—	76.343		0.014	31.283	1.25E-04	NR	—	0.014	80.043	<0.01	0.48%
MERCURY	X	NR	—	ND		—	0.066	2.70E-07	NR	—	2.70E-07	0.002	<0.01	0.34%
ZINC	X	NR	—	21.241		0.004	48.942	1.96E-04	NR	—	0.004	48.696	<0.01	0.23%
NICKEL	X	NR	—	1.700		3.20E-04	15.387	6.16E-05	NR	—	3.81E-04	12.174	<0.01	0.08%
COBALT	X	NR	—	ND		—	9.750	3.90E-05	NR	—	3.90E-05	1.510	<0.01	0.07%
SELENIUM		NR	—	ND		—	0.574	2.30E-06	NR	—	2.30E-06	0.137	<0.01	0.04%
BERYLLIUM		NR	—	ND		—	0.686	2.75E-06	NR	—	2.75E-06	0.201	<0.01	0.04%
ITHIUM		NR	—	ND		—	6.643	2.66E-05	NR	—	2.66E-05	2.856	<0.01	0.02%
NITRATE/NITRITE		NR	—	NR		—	1.000	4.00E-06	NR	—	4.00E-06	3.969	<0.01	<0.01%
TOLUENE	X	NR	—	NR	0.003	6.40E-07	NR	—	NR	—	6.40E-07	3.515	<0.01	<0.01%
CHROMIUM	X	NR	—	ND		—	13.137	5.26E-05	NR	—	5.26E-05	832.996	<0.01	<0.01%

HAZARD INDEX 0.04

Notes:

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NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Coyotes in the OU6 Burial Trenches Source Area at RFETS

COYOTES OU6 BURIAL TRENCHES		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU6	IR = 0.042 SUF = 0.001		IR = 0.005 SUF = 0.001			IR = NR SUF = 0.001		IR = I SUF = I					
MAGNESIUM	X	5840.000	0.245	1586.864		0.008	NR	—	NR	—	0.253	51.154	<0.01	31.91%
VANADIUM	X	14.300	0.001	1.400		7.00E-06	NR	—	NR	—	0.001	0.255	<0.01	15.34%
ALUMINUM		1080.000	0.045	296.486		0.001	NR	—	NR	—	0.047	20.639	<0.01	14.63%
BARIUM	X	62.500	0.003	48.775		2.44E-04	NR	—	NR	—	0.003	1.654	<0.01	11.18%
SELENIUM		3.900	1.64E-04	2.580		1.29E-05	NR	—	NR	—	1.77E-04	0.137	<0.01	8.34%
COPPER	X	103.000	0.004	19.589		9.79E-05	NR	—	NR	—	0.004	5.041	<0.01	5.66%
ZINC	X	887.000	0.037	26.858		1.34E-04	NR	—	NR	—	0.037	48.696	<0.01	4.95%
LEAD	X	25.100	0.001	1.183		5.92E-06	NR	—	NR	—	0.001	2.435	<0.01	2.81%
TIN		52.900	0.002	2.900		1.45E-05	NR	—	NR	—	0.002	7.551	<0.01	1.91%
MANGANESE	X	103.000	0.004	21.320		1.07E-04	NR	—	NR	—	0.004	26.783	<0.01	1.07%
MERCURY	X	ND	—	0.058		2.90E-07	NR	—	NR	—	2.90E-07	0.002	<0.01	0.88%
STRONTIUM	X	104.000	0.004	50.056		2.50E-04	NR	—	NR	—	0.005	80.043	<0.01	0.37%
ARSENIC	X	ND	—	0.630		3.15E-06	NR	—	NR	—	3.15E-06	0.063	<0.01	0.32%
CADMIUM		ND	—	1.300		6.50E-06	NR	—	NR	—	6.50E-06	0.135	<0.01	0.31%
SILVER	X	3.000	1.26E-04	ND		—	NR	—	NR	—	1.26E-04	6.711	<0.01	0.12%
MOLYBDENUM	X	ND	—	2.100		1.05E-05	NR	—	NR	—	1.05E-05	0.768	<0.01	0.09%
LITHIUM		ND	—	2.500		1.25E-05	NR	—	NR	—	1.25E-05	2.856	<0.01	0.03%
NICKEL	X	ND	—	10.500		5.25E-05	NR	—	NR	—	5.25E-05	12.174	<0.01	0.03%
BERYLLIUM		ND	—	0.130		6.50E-07	NR	—	NR	—	6.50E-07	0.201	<0.01	0.02%
ACETONE	X	NR	—	NR	1.066	5.33E-06	NR	—	NR	—	5.33E-06	3.043	<0.01	0.01%
CHROMIUM	X	24.300	0.001	1.600		8.00E-06	NR	—	NR	—	0.001	832.996	<0.01	0.01%
METHYLENE CHLORIDE	X	NR	—	NR	0.371	1.85E-06	NR	—	NR	—	1.85E-06	1.780	<0.01	0.01%
TOLUENE	X	NR	—	NR	0.089	4.40E-07	NR	—	NR	—	4.40E-07	3.515	<0.01	<0.01%
2-BUTANONE	X	NR	—	NR	2.157	1.08E-05	NR	—	NR	—	1.08E-05	534.882	<0.01	<0.01%
4-METHYL-2-PENTANONE	X	NR	—	NR	0.018	9.00E-08	NR	—	NR	—	9.00E-08	7.609	<0.01	<0.01%
CHLOROFORM	X	NR	—	NR	0.006	3.00E-08	NR	—	NR	—	3.00E-08	4.565	<0.01	<0.01%
TRICHLOROETHENE	X	NR	—	NR	0.028	1.40E-07	NR	—	NR	—	1.40E-07	19.579	<0.01	<0.01%
BENZENE	X	NR	—	NR	0.002	1.00E-08	NR	—	NR	—	1.00E-08	3.567	<0.01	<0.01%

HAZARD INDEX 0.02

Notes:

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ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Coyotes ... the OU2 Mound Area Source Area at RFETS

COYOTES OU2 MOUND AREA		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU2	IR = NR SUF = 0.002		IR = 0.047 SUF = 0.002			IR = 0.001 SUF = 0.002		IR = I SUF = I					
ALUMINUM		NR	—	NR		—	10100.000	0.020	NR	—	0.020	20.639	<0.01	54.48%
VANADIUM		NR	—	NR		—	31.100	6.22E-05	NR	—	6.22E-05	0.255	<0.01	13.56%
ARSENIC		NR	—	NR		—	5.900	1.18E-05	NR	—	1.18E-05	0.063	<0.01	10.51%
BARIUM		NR	—	NR		—	108.000	2.16E-04	NR	—	2.16E-04	1.654	<0.01	7.27%
MAGNESIUM		NR	—	NR		—	2730.000	0.005	NR	—	0.005	51.154	<0.01	5.94%
AROCLOR-1254	X	NR	—	NR	ND	—	0.970	1.94E-06	NR	—	1.94E-06	0.059	<0.01	1.84%
ACETONE		NR	—	NR	0.989	9.29E-05	NR	—	NR	—	9.29E-05	3.043	<0.01	1.70%
MANGANESE		NR	—	NR		—	240.000	4.80E-04	NR	—	4.80E-04	26.783	<0.01	1.00%
THALLIUM		NR	—	NR		—	0.500	1.00E-06	NR	—	1.00E-06	0.074	<0.01	0.75%
LEAD	X	NR	—	NR		—	16.000	3.20E-05	NR	—	3.20E-05	2.435	<0.01	0.73%
COBALT		NR	—	NR		—	6.200	1.24E-05	NR	—	1.24E-05	1.510	<0.01	0.46%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	NR	0.166	1.57E-05	0.052	1.00E-07	NR	—	1.58E-05	2.480	<0.01	0.35%
LITHIUM		NR	—	NR		—	8.800	1.76E-05	NR	—	1.76E-05	2.856	<0.01	0.34%
COPPER		NR	—	NR		—	13.100	2.62E-05	NR	—	2.62E-05	5.041	<0.01	0.29%
METHYLENE CHLORIDE		NR	—	NR	0.062	5.87E-06	NR	—	NR	—	5.87E-06	1.780	<0.01	0.18%
ZINC		NR	—	NR		—	46.300	9.26E-05	NR	—	9.26E-05	48.696	<0.01	0.11%
NICKEL		NR	—	NR		—	11.400	2.28E-05	NR	—	2.28E-05	12.174	<0.01	0.10%
STRONTIUM		NR	—	NR		—	66.300	1.33E-04	NR	—	1.33E-04	80.043	<0.01	0.09%
BENZO(a)PYRENE	X	NR	—	NR	ND	—	0.096	1.90E-07	NR	—	1.90E-07	0.135	<0.01	0.08%
TOLUENE		NR	—	NR	0.042	3.94E-06	NR	—	NR	—	3.94E-06	3.515	<0.01	0.06%
AROCLOR-1260	X	NR	—	NR	ND	—	0.660	1.32E-06	NR	—	1.32E-06	2.084	<0.01	0.04%
TETRACHLOROETHENE		NR	—	NR	0.011	1.01E-06	NR	—	NR	—	1.01E-06	1.866	<0.01	0.03%
CHLOROFORM		NR	—	NR	0.020	1.92E-06	NR	—	NR	—	1.92E-06	4.565	<0.01	0.02%
4 METHYL-2-PENTANONE		NR	—	NR	0.027	2.56E-06	NR	—	NR	—	2.56E-06	7.609	<0.01	0.02%
BENZENE		NR	—	NR	0.007	6.50E-07	NR	—	NR	—	6.50E-07	3.567	<0.01	0.01%
BENZO(b)FLUORANTHENE	X	NR	—	NR	ND	—	0.120	2.40E-07	NR	—	2.40E-07	1.350	<0.01	0.01%
BENZO(a)ANTHRACENE	X	NR	—	NR	ND	—	0.086	1.70E-07	NR	—	1.70E-07	1.350	<0.01	0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	—	NR	ND	—	0.045	9.00E-08	NR	—	9.00E-08	1.350	<0.01	<0.01%
FLUORANTHENE	X	NR	—	NR	0.004	3.80E-07	0.200	4.00E-07	NR	—	7.80E-07	16.659	<0.01	<0.01%
TRICHLOROETHENE		NR	—	NR	0.010	9.40E-07	NR	—	NR	—	9.40E-07	19.579	<0.01	<0.01%
PYRENE	X	NR	—	NR	ND	—	0.180	3.60E-07	NR	—	3.60E-07	9.996	<0.01	<0.01%
2-BUTANONE		NR	—	NR	0.186	1.75E-05	NR	—	NR	—	1.75E-05	534.882	<0.01	<0.01%
CHROMIUM	X	NR	—	NR		—	10.200	2.04E-05	NR	—	2.04E-05	832.996	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	—	NR	0.015	1.41E-06	ND	—	NR	—	1.41E-06	74.412	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	—	NR	ND	—	0.045	9.00E-08	NR	—	9.00E-08	13.503	<0.01	<0.01%
CHRYSENE	X	NR	—	NR	ND	—	0.100	2.00E-07	NR	—	2.00E-07	13.503	<0.01	<0.01%
PHENANTHRENE	X	NR	—	NR	ND	—	0.083	1.70E-07	NR	—	1.70E-07	135.026	<0.01	<0.01%

HAZARD INDEX <0.01

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor

I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Coyotes in the OU5 Surface Disturbance Source Area at RFETS

COYOTES OU5 SURFACE DISTURBANCE		EXPOSURE POINT									SUMMARY			
		Small Mammal		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU5	IR = NR SUF = 0.001		IR = 0.047 SUF = 0.001			IR = 0.001 SUF = 0.001		IR = I SUF = I					
ALUMINUM		NR	—	NR		—	7680.000	0.008	NR	—	0.008	20.639	<0.01	39.39%
MERCURY	X	NR	—	NR		—	0.660	6.60E-07	NR	—	6.60E-07	0.002	<0.01	32.94%
VANADIUM		NR	—	NR		—	22.200	2.22E-05	NR	—	2.22E-05	0.255	<0.01	9.20%
ARSENIC		NR	—	NR		—	3.900	3.90E-06	NR	—	3.90E-06	0.063	<0.01	6.60%
BARIUM	X	NR	—	NR		—	80.800	8.08E-05	NR	—	8.08E-05	1.654	<0.01	5.17%
MAGNESIUM		NR	—	NR		—	1810.000	0.002	NR	—	0.002	51.154	<0.01	3.74%
MANGANESE		NR	—	NR		—	218.000	2.18E-04	NR	—	2.18E-04	26.783	<0.01	0.86%
LEAD	X	NR	—	NR		—	14.100	1.41E-05	NR	—	1.41E-05	2.435	<0.01	0.61%
COBALT	X	NR	—	NR		—	5.700	5.70E-06	NR	—	5.70E-06	1.510	<0.01	0.40%
BERYLLIUM		NR	—	NR		—	0.600	6.00E-07	NR	—	6.00E-07	0.201	<0.01	0.32%
COPPER	X	NR	—	NR		—	14.200	1.42E-05	NR	—	1.42E-05	5.041	<0.01	0.30%
LITHIUM	X	NR	—	NR		—	6.500	6.50E-06	NR	—	6.50E-06	2.856	<0.01	0.24%
NICKEL		NR	—	NR		—	10.100	1.01E-05	NR	—	1.01E-05	12.174	<0.01	0.09%
ZINC	X	NR	—	NR		—	40.000	4.00E-05	NR	—	4.00E-05	48.696	<0.01	0.09%
STRONTIUM	X	NR	—	NR		—	38.600	3.86E-05	NR	—	3.86E-05	80.043	<0.01	0.05%
CHROMIUM		NR	—	NR		—	7.800	7.80E-06	NR	—	7.80E-06	832.996	<0.01	<0.01%

HAZARD INDEX <0.01

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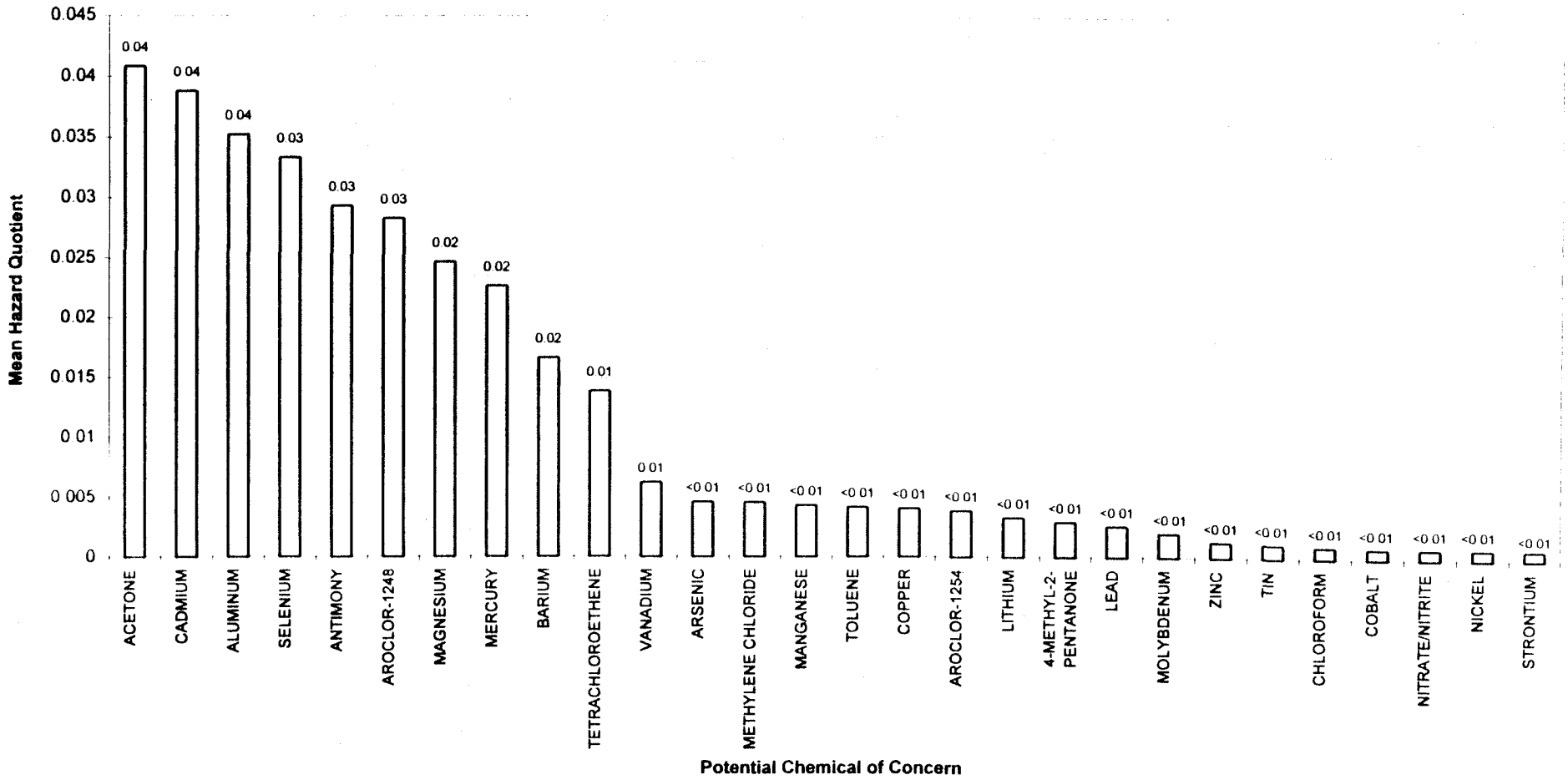
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mule Deer

Summary of Sitewide Ecotoxicological Risk to Mule Deer at RFETS

Mean Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



Note: Variation in similar values is due to rounding

Summary of Sitewide Ecotoxico. cal Risk to Mule Deer at RFETS

MULE DEER																		
Analyte	OU1 881 Hillside	OU5 Ash Pits	OU6 C-Ponds	OU5 Old Landfill	OU2 903 Pad	OU5 Surface Disturbance	OU2 East Trenches	OU4 Downgradient	OU6 A-Ponds	OU6 B-Ponds	OU2 Mound Area	OU6 North Spray Field	OU11 West Spray Field	OU6 Burial Trenches	OU7 Downgradient Areas	OU6 Soil Dump Areas	Mean Hazard Quotient	Hazard Quotient Range	Percent of Total Risk
ACETONE	0.27	1.50E-05	1.56E-04	8.85E-04	0.09	—	0.16	3.16E-04	2.98E-04	1.76E-05	1.00E-04	—	6.04E-04	5.39E-05	—	0.01	0.04	<0.001 - 0.27	12.08%
CADMIUM	0.05	0.07	0.03	0.04	0.10	—	0.15	0.02	0.02	0.02	—	0.01	2.47E-03	2.38E-03	0.01	0.02	0.04	<0.001 - 0.15	11.48%
ALUMINUM	0.05	0.06	0.02	0.03	0.09	2.16E-03	0.08	0.02	0.02	0.03	3.79E-03	0.01	0.09	1.22E-03	2.19E-03	0.04	0.04	<0.001 - 0.09	10.42%
SELENIUM	0.05	5.65E-04	4.65E-04	0.03	0.09	—	1.34E-03	0.03	0.03	0.03	—	1.69E-04	1.51E-03	4.18E-03	0.02	0.17	0.03	<0.001 - 0.17	9.85%
ANTIMONY	4.78E-03	4.79E-03	4.80E-03	0.05	0.11	—	—	—	2.76E-03	2.65E-03	—	0.03	0.06	—	—	—	0.03	<0.001 - 0.11	8.68%
AROCLOR-1248	0.04	—	—	—	0.02	—	—	—	—	—	—	—	—	—	—	—	0.03	0.02 - 0.04	8.37%
MAGNESIUM	0.01	0.05	3.08E-03	0.06	0.08	2.34E-04	0.01	0.02	0.04	0.02	4.70E-04	0.03	0.01	3.01E-03	0.01	0.05	0.02	<0.001 - 0.08	7.30%
MERCURY	1.91E-03	0.05	1.71E-04	2.81E-03	0.09	1.65E-03	—	0.02	0.03	0.02	—	4.42E-04	—	2.13E-03	—	0.06	0.02	<0.001 - 0.09	6.71%
BARIUM	0.01	0.05	2.75E-03	0.04	0.07	2.25E-04	0.01	0.02	0.02	0.02	4.01E-04	0.01	0.01	1.99E-03	0.01	0.02	0.02	<0.001 - 0.07	4.93%
TETRACHLOROETHENE	3.26E-05	—	—	1.29E-05	9.00E-05	—	0.11	8.30E-07	—	1.00E-05	1.80E-06	—	—	—	—	5.65E-06	0.01	<0.001 - 0.11	4.11%
VANADIUM	0.01	0.01	3.48E-03	0.01	0.02	3.34E-04	0.01	0.01	0.01	4.12E-03	6.24E-04	2.50E-03	0.01	3.09E-04	7.18E-04	0.01	0.01	<0.001 - 0.02	1.86%
ARSENIC	3.60E-03	0.01	1.19E-03	0.01	3.44E-03	1.95E-04	0.01	0.01	0.01	0.01	3.94E-04	8.79E-04	0.01	4.63E-04	1.29E-03	2.71E-03	<0.01	<0.001 - 0.01	1.37%
METHYLENE CHLORIDE	0.03	1.35E-05	3.36E-05	5.18E-05	0.01	—	0.02	3.87E-05	5.71E-06	—	1.08E-05	—	1.17E-04	3.21E-05	—	2.89E-05	<0.01	<0.001 - 0.03	1.36%
MANGANESE	1.63E-03	0.01	9.40E-04	4.14E-03	0.03	8.55E-05	2.90E-03	2.20E-03	4.57E-03	2.48E-03	1.25E-04	1.14E-03	3.50E-03	1.23E-04	2.67E-04	0.01	<0.01	<0.001 - 0.03	1.29%
TOLUENE	0.04	—	1.02E-05	1.40E-05	0.02	—	7.09E-04	5.85E-05	5.93E-06	5.61E-06	3.67E-06	6.00E-07	6.76E-06	3.89E-06	9.45E-05	8.00E-05	<0.01	<0.001 - 0.04	1.24%
COPPER	0.01	4.29E-03	2.81E-03	3.52E-03	0.01	2.96E-05	0.01	4.55E-03	0.01	0.01	3.64E-05	8.77E-04	7.28E-04	5.99E-04	3.27E-03	4.35E-03	<0.01	<0.001 - 0.01	1.21%
AROCLOR-1254	0.01	—	—	3.11E-03	0.01	—	9.32E-04	—	—	6.02E-04	8.33E-04	—	—	—	—	2.99E-03	<0.01	<0.001 - 0.01	1.18%
LITHIUM	4.95E-04	4.41E-04	2.91E-04	9.69E-04	2.42E-03	2.39E-05	1.16E-03	0.01	0.02	2.34E-03	4.31E-05	6.51E-05	9.97E-04	1.35E-04	1.47E-03	0.01	<0.01	<0.001 - 0.02	0.98%
4-METHYL-2-PENTANONE	0.01	—	—	4.41E-06	0.01	—	1.38E-04	—	—	—	1.10E-06	—	—	3.70E-07	6.60E-06	1.19E-05	<0.01	<0.001 - 0.01	0.88%
LEAD	4.11E-03	3.31E-03	1.58E-03	2.28E-03	0.01	6.08E-05	0.01	9.66E-04	1.40E-03	1.18E-03	9.20E-05	9.07E-04	0.01	7.49E-05	2.42E-04	2.40E-03	<0.01	<0.001 - 0.01	0.78%
MOLYBDENUM	9.23E-05	5.43E-05	2.19E-05	4.28E-03	0.01	—	—	1.66E-03	1.14E-03	9.60E-04	—	—	1.90E-04	8.40E-05	3.50E-04	0.01	<0.01	<0.001 - 0.01	0.60%
ZINC	2.00E-03	1.72E-03	1.36E-03	1.79E-03	2.56E-03	8.62E-06	4.10E-03	8.41E-04	1.62E-03	2.35E-03	1.33E-05	2.97E-04	2.59E-04	8.49E-05	2.59E-04	1.87E-03	<0.01	<0.001 - <0.001	0.39%
TIN	8.11E-04	1.37E-03	3.12E-04	6.41E-04	2.59E-03	—	1.14E-03	1.21E-03	1.75E-03	3.32E-03	—	—	1.84E-04	5.96E-05	1.64E-04	1.80E-03	<0.01	<0.001 - <0.001	0.35%
CHLOROFORM	3.97E-03	—	2.86E-06	2.82E-06	3.35E-03	—	1.58E-03	—	—	5.20E-07	1.38E-06	—	2.25E-05	2.10E-07	—	—	<0.01	<0.001 - <0.001	0.29%
COBALT	7.92E-04	6.82E-04	3.87E-04	4.75E-04	3.03E-03	3.99E-05	1.19E-03	2.21E-04	1.16E-03	2.39E-03	5.79E-05	1.82E-04	1.26E-03	—	—	4.76E-04	<0.01	<0.001 - <0.001	0.26%
NITRATE/NITRITE	3.46E-03	1.14E-04	6.97E-04	1.92E-03	1.16E-03	—	—	4.06E-05	—	—	—	7.11E-06	1.13E-03	—	4.79E-05	2.22E-04	<0.01	<0.001 - <0.001	0.26%
NICKEL	3.42E-04	3.27E-03	8.10E-05	1.32E-03	1.77E-03	8.71E-06	2.39E-04	5.43E-04	1.59E-03	1.15E-03	1.31E-05	1.21E-04	2.13E-04	1.33E-04	4.52E-04	2.72E-03	<0.01	<0.001 - <0.001	0.26%
STRONTIUM	1.33E-04	1.52E-03	5.69E-05	1.89E-03	2.39E-03	5.06E-06	1.09E-04	8.90E-04	1.88E-03	8.29E-04	1.16E-05	5.98E-04	8.30E-05	9.63E-05	4.41E-04	2.57E-03	<0.01	<0.001 - <0.001	0.25%
BERYLLIUM	8.90E-04	1.67E-03	2.53E-05	3.93E-04	1.07E-03	3.14E-05	7.37E-04	2.21E-03	3.86E-04	2.16E-04	—	9.59E-05	9.59E-04	9.99E-05	2.11E-03	3.52E-04	<0.01	<0.001 - <0.001	0.22%
BENZO(a)PYRENE	4.61E-04	—	—	2.05E-03	5.41E-04	—	3.17E-04	5.95E-05	—	—	9.96E-06	—	—	—	—	4.48E-04	<0.01	<0.001 - <0.001	0.16%
TOTAL XYLENES	3.62E-05	—	—	2.16E-05	6.67E-04	—	2.49E-03	—	—	—	—	—	—	—	1.51E-06	9.86E-06	<0.01	<0.001 - <0.001	0.16%
BIS(2-ETHYLHEXYL)PHTHALATE	4.17E-03	2.05E-06	4.10E-06	2.84E-05	5.67E-04	—	6.03E-05	1.59E-05	—	—	2.10E-05	—	2.78E-05	—	2.22E-06	1.55E-04	<0.01	<0.001 - <0.001	0.14%
SILVER	2.49E-04	4.10E-04	2.75E-06	3.71E-04	7.47E-04	—	4.75E-04	—	1.42E-06	6.79E-04	—	—	—	—	—	—	<0.01	<0.001 - <0.001	0.11%
THALLIUM	4.02E-04	3.05E-04	5.93E-05	1.81E-04	3.72E-04	—	—	1.27E-04	—	5.03E-05	3.50E-05	1.43E-03	3.80E-04	—	—	1.48E-04	<0.01	<0.001 - <0.001	0.09%
DIBENZO(a,h)ANTHRACENE	5.14E-04	—	—	5.14E-04	1.18E-04	—	—	1.40E-05	—	—	—	—	—	—	—	1.09E-04	<0.01	<0.001 - <0.001	0.07%
DIELDRIN	—	—	—	1.28E-04	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	0.04%
ENDRIN KETONE	—	—	—	1.14E-04	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	0.03%
PYRENE	6.71E-04	—	6.47E-07	9.75E-05	1.42E-04	—	1.04E-05	7.70E-07	—	—	2.50E-07	—	—	—	1.90E-07	1.74E-05	<0.01	<0.001 - <0.001	0.03%
TRICHLOROETHENE	2.99E-05	—	—	2.53E-06	1.87E-04	—	4.71E-04	—	—	7.52E-07	1.60E-07	—	1.14E-06	2.20E-07	—	—	<0.01	<0.001 - <0.001	0.03%
2-BUTANONE	6.83E-04	—	5.55E-08	8.70E-07	1.92E-05	—	1.85E-05	—	—	—	1.10E-07	—	1.25E-06	6.30E-07	—	3.56E-05	<0.01	<0.001 - <0.001	0.02%
BENZO(k)FLUORANTHENE	3.48E-05	—	—	1.12E-04	3.98E-05	—	—	3.87E-06	—	—	—	—	—	—	—	1.86E-04	<0.01	<0.001 - <0.001	0.02%
PENTACHLOROPHENOL	6.49E-05	—	—	4.44E-05	—	—	—	—	—	—	—	—	—	—	—	9.04E-05	<0.01	<0.001 - <0.001	0.02%
PHENOL	—	—	—	7.98E-05	—	—	—	—	—	—	—	—	—	—	—	4.25E-05	<0.01	<0.001 - <0.001	0.02%
BENZO(b)FLUORANTHENE	3.75E-05	—	—	2.19E-04	4.71E-05	—	3.42E-05	5.40E-06	—	—	1.24E-06	—	—	—	—	7.39E-05	<0.01	<0.001 - <0.001	0.02%
1,2-DICHLOROETHENE	1.70E-06	—	—	—	2.35E-05	—	1.99E-04	—	—	2.15E-06	—	—	—	—	—	—	<0.01	<0.001 - <0.001	0.02%
FLUORANTHENE	3.31E-04	—	3.22E-07	6.52E-05	7.26E-05	—	5.78E-06	4.50E-07	—	—	2.50E-07	—	—	—	1.00E-07	1.06E-05	<0.01	<0.001 - <0.001	0.02%
BENZO(a)ANTHRACENE	5.14E-05	—	—	2.29E-04	5.34E-05	—	2.23E-05	4.76E-06	—	—	8.90E-07	—	—	—	2.10E-07	4.70E-05	<0.01	<0.001 - <0.001	0.02%
1,1-DICHLOROETHENE	5.45E-05	—	—	—	1.54E-05	—	6.69E-05	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	0.01%
INDENO(1,2,3-cd)PYRENE	2.08E-05	—	—	1.61E-04	2.41E-05	—	9.70E-07	4.46E-06	—	—	4.70E-07	—	—	—	—	2.83E-05	<0.01	<0.001 - <0.001	0.01%
HEPTACHLOR EPOXIDE	—	—	—	2.23E-05	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	0.01%
PHENANTHRENE	1.01E-04	—	—	1.43E-05	2.09E-05	—	1.13E-06	2.00E-08	—	—	1.00E-08	—	—	—	3.00E-08	1.19E-06	<0.01	<0.001 - <0.001	<0.01%
BENZENE	—	—	—	—	—	—	4.98E-05	—	—	—	6.00E-07	—	—	1.00E-07	—	4.85E-06	<0.01	<0.001 - <0.001	<0.01%
FLUORENE	6.80E-06	—	—	4.20E-05	1.99E-06	—	8.49E-06	—	—	—	—	—	—	—	—	1.59E-06	<0.01	<0.001 - <0.001	<0.01%
CHROMIUM	2.60E-05	8.15E-06	2.10E-05	9.33E-06	3.08E-05	1.00E-07	5.17E-05	2.17E-06	6.53E-07	7.17E-06	1.70E-07	4.40E-07	4.56E-06	3.00E-07	3.43E-06	2.14E-06	<0.01	<0.001 - <0.001	<0.01%
BENZYL ALCOHOL	9.06E-06	—	—	—	6.55E-06	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
ENDOSULFAN SULFATE	—	—	—	7.10E-06	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	[illegible]01 - <0.001	<0.01%

Summary of Sitewide Ecotoxicological Risk to Mule Deer at RFETS

MULE DEER																			
Analyte	OU1 881 Hillside	OU5 Ash Pits	OU8 C-Ponds	OU5 Old Landfill	OU2 903 Pad	OU5 Surface Disturbance	OU2 East Trenches	OU4 Downgradient	OU6 A-Ponds	OU6 B-Ponds	OU2 Mound Area	OU9 North Spray Field	OU11 West Spray Field	OU8 Burial Trenches	OU7 Downgradient Areas	OU6 Soil Dump Areas	Mean Hazard Quotient	Hazard Quotient Range	Percent of Total Risk
1,1,1-TRICHLOROETHANE	1.70E-07	—	—	3.76E-08	3.87E-07	—	3.15E-05	—	—	—	—	—	—	—	1.00E-08	—	<0.01	<0.001 - <0.001	<0.01%
CHRYSENE	6.48E-06	—	—	2.68E-05	6.24E-06	—	3.61E-06	6.50E-07	—	—	1.00E-07	—	—	—	3.00E-08	5.35E-06	<0.01	<0.001 - <0.001	<0.01%
NAPHTHALENE	1.02E-06	—	—	1.93E-05	—	—	3.80E-06	—	—	—	—	—	—	—	—	9.00E-08	<0.01	<0.001 - <0.001	<0.01%
1,2-DICHLOROETHANE	1.34E-05	2.19E-06	—	—	—	—	—	—	—	7.14E-07	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
ISOPHORONE	—	—	—	4.28E-06	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
METHOXYCHLOR	—	—	—	4.20E-06	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
BUTYL BENZYL PHTHALATE	—	—	—	5.94E-06	1.25E-05	—	—	6.50E-07	—	—	—	—	—	—	7.10E-07	7.70E-07	<0.01	<0.001 - <0.001	<0.01%
4,4'-DDT	—	—	—	2.96E-06	—	—	2.59E-06	—	6.34E-06	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
ALDRIN	8.43E-07	—	—	6.39E-06	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
delta-BHC	—	—	—	—	—	—	—	—	2.80E-06	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
AROCLOR-1260	—	—	—	5.67E-07	—	—	—	—	—	—	4.47E-06	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
2-METHYLNAPHTHALENE	—	—	—	2.52E-06	—	—	2.46E-06	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
BENZO(ghi)PERYLENE	2.10E-06	—	—	6.05E-06	2.45E-06	—	2.20E-07	5.10E-07	—	—	5.00E-08	—	—	—	—	2.46E-06	<0.01	<0.001 - <0.001	<0.01%
ACENAPHTHENE	1.09E-06	—	—	5.16E-06	5.20E-07	—	1.12E-06	—	—	—	—	—	—	—	—	3.70E-07	<0.01	<0.001 - <0.001	<0.01%
ANTHRACENE	8.30E-07	—	—	5.18E-06	5.35E-07	—	7.40E-07	—	—	—	—	—	—	—	—	3.30E-07	<0.01	<0.001 - <0.001	<0.01%
DI-n-BUTYL PHTHALATE	2.28E-06	—	—	8.84E-07	4.08E-06	—	1.24E-06	4.00E-08	1.37E-07	6.83E-08	6.00E-08	—	1.58E-06	—	—	7.20E-07	<0.01	<0.001 - <0.001	<0.01%
1,1-DICHLOROETHANE	3.70E-07	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
DI-n-OCTYL PHTHALATE	2.01E-07	—	—	5.03E-08	—	—	—	9.00E-08	—	—	—	—	—	—	—	5.40E-07	<0.01	<0.001 - <0.001	<0.01%

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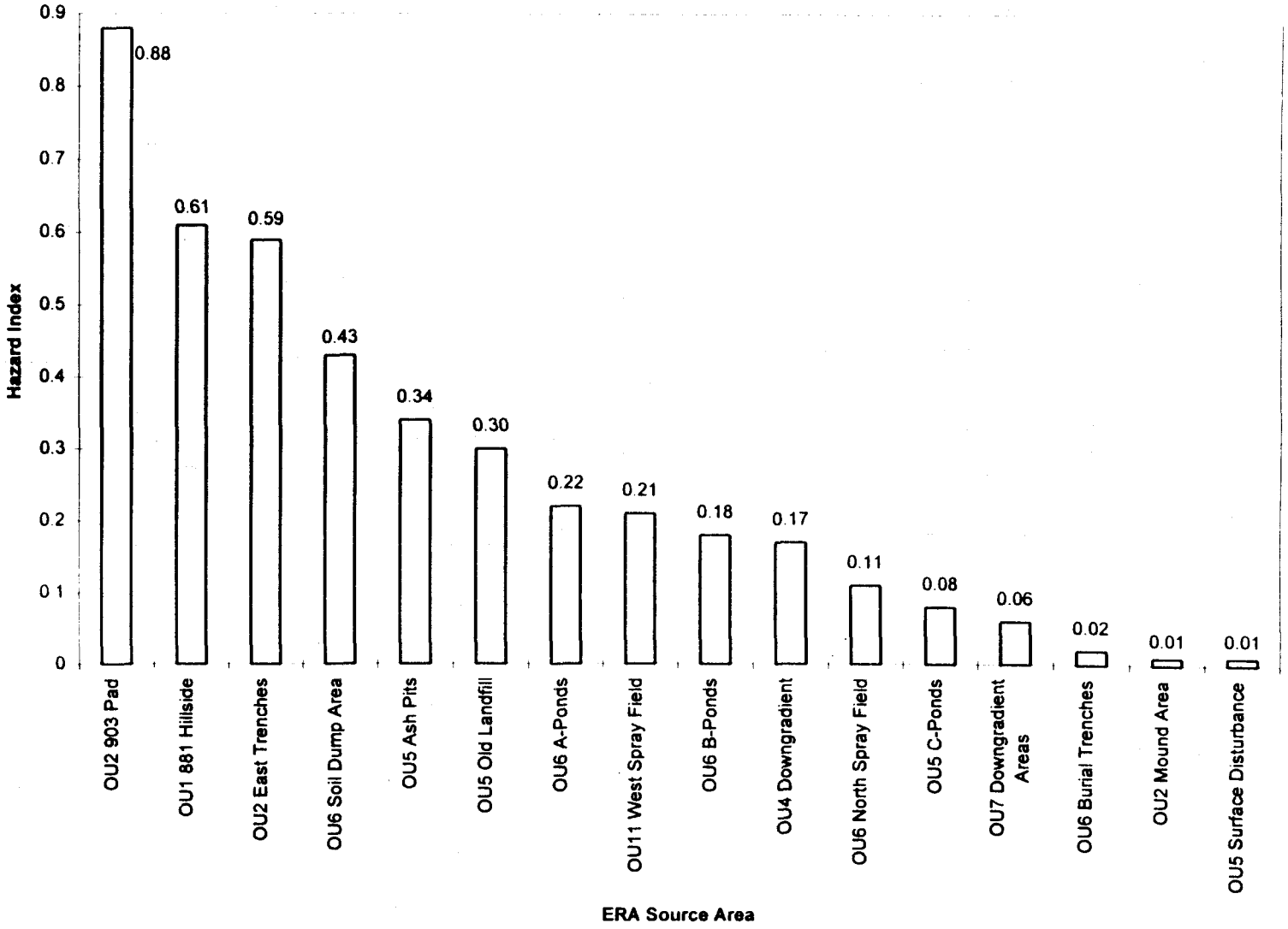
Summary of Ecotoxicological Risk to Mule Deer at RFETS



Summary of Ecotoxicological Risk to Mule Deer in the OU2 903 Pad Source Area at RFETS

MULE DEER OU2 903 PAD		EXPOSURE POINT							SUMMARY				
		Vegetation			Surficial Soil		Surface Water						
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	HQ	Hazard Quotient	Percent of Total Risk
Analyte	PCOC In OU2	IR = 0.022 SUF = 0.099			IR = 0.001 SUF = 0.099		IR = 0.044 SUF = 0.066						
ANTIMONY		ND		—	9.800	0.001	0.020	5.74E-05	0.001	0.009	0.11	0.11	12.53%
CADMIUM		2.100		0.005	0.920	9.11E-05	0.002	6.68E-06	0.005	0.048	0.10	0.10	11.02%
SELENIUM		2.288		0.005	0.620	6.14E-05	0.008	2.36E-05	0.005	0.054	0.09	0.09	10.59%
ACETONE		NR	73.447	0.160	NR	—	0.013	3.81E-05	0.160	1.739	0.09	0.09	10.44%
MERCURY		0.098		2.13E-04	0.060	5.94E-06	1.14E-04	3.31E-07	2.20E-04	0.002	0.09	0.09	10.39%
ALUMINUM		297.170		0.647	11886.180	1.177	5.480	1.59E-02	1.840	21.331	0.09	0.09	9.79%
MAGNESIUM		1426.036		3.106	3426.354	0.339	39.934	1.16E-01	3.561	46.422	0.08	0.08	8.71%
BARIUM		59.791		0.130	143.681	0.014	0.261	7.59E-04	0.145	2.154	0.07	0.07	7.65%
MANGANESE		169.997		0.370	318.236	0.032	0.312	9.05E-04	0.403	15.306	0.03	0.03	2.99%
VANADIUM		2.400		0.005	35.681	0.004	0.026	7.66E-05	0.009	0.399	0.02	0.02	2.52%
TOLUENE		NR	18.926	0.041	NR	—	ND	—	0.041	2.008	0.02	0.02	2.33%
AROCLOR-1248		NR	0.027	5.91E-05	0.211	2.09E-05	ND	—	8.00E-05	0.004	0.02	0.02	2.19%
METHYLENE CHLORIDE		NR	5.553	0.012	NR	—	0.004	1.08E-05	0.012	1.018	0.01	0.01	1.35%
AROCLOR-1254	X	NR	0.033	7.24E-05	0.208	2.06E-05	0.002	5.45E-06	9.85E-05	0.009	0.01	0.01	1.20%
COPPER		10.420		0.023	21.815	0.002	0.024	6.99E-05	0.025	2.880	0.01	0.01	0.98%
4-METHYL-2-PENTANONE		NR	16.929	0.037	NR	—	ND	—	0.037	4.348	0.01	0.01	0.96%
MOLYBDENUM		5.700		0.012	3.000	2.97E-04	0.016	4.50E-05	0.013	2.200	0.01	0.01	0.66%
LEAD	X	1.789		0.004	32.367	0.003	0.007	1.93E-05	0.007	1.391	0.01	0.01	0.58%
ARSENIC		ND		—	3.998	3.96E-04	0.006	1.61E-05	4.12E-04	0.120	3.44E-03	<0.01	0.39%
CHLOROFORM		NR	3.995	0.009	NR	—	0.011	3.13E-05	0.009	2.609	3.35E-03	<0.01	0.38%
COBALT		0.830		0.002	7.671	0.001	0.011	3.05E-05	0.003	0.856	3.03E-03	<0.01	0.34%
TIN		3.500		0.008	33.323	0.003	0.053	1.53E-04	0.011	4.282	2.59E-03	<0.01	0.29%
ZINC		29.152		0.063	72.699	0.007	0.227	6.60E-04	0.071	27.830	2.56E-03	<0.01	0.29%
LITHIUM		1.100		0.002	13.592	0.001	0.071	2.05E-04	0.004	1.633	2.42E-03	<0.01	0.27%
STRONTIUM		46.852		0.102	43.040	0.004	1.028	2.99E-03	0.109	45.745	2.39E-03	<0.01	0.27%
NICKEL		4.400		0.010	26.987	0.003	0.014	4.12E-05	0.012	6.957	1.77E-03	<0.01	0.20%
NITRATE/NITRITE		NR		—	3.106	3.07E-04	0.793	2.30E-03	0.003	2.251	1.16E-03	<0.01	0.13%
BERYLLIUM		ND		—	1.200	1.19E-04	0.001	3.66E-06	0.000	0.115	1.07E-03	<0.01	0.12%
SILVER		1.300		0.003	ND	—	0.005	1.31E-05	0.003	3.806	7.47E-04	<0.01	0.08%
TOTAL XYLENES		NR	0.049	1.06E-04	NR	—	ND	—	1.06E-04	0.159	6.67E-04	<0.01	0.08%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	0.358	0.001	0.248	2.46E-05	ND	—	0.001	1.417	5.67E-04	<0.01	0.06%
BENZO(a)PYRENE	X	NR	0.005	1.01E-05	0.320	3.17E-05	ND	—	4.18E-05	0.077	5.41E-04	<0.01	0.06%
THALLIUM		ND		—	0.430	4.26E-05	ND	—	4.26E-05	0.114	3.72E-04	<0.01	0.04%
TRICHLOROETHENE		NR	0.937	0.002	NR	—	0.012	3.55E-05	0.002	11.105	1.87E-04	<0.01	0.02%
PYRENE	X	NR	0.339	0.001	0.644	6.37E-05	ND	—	0.001	5.669	1.42E-04	<0.01	0.02%
DIBENZO(a,h)ANTHRACENE		NR	ND	—	0.092	9.11E-06	ND	—	9.11E-06	0.077	1.18E-04	<0.01	0.01%
TETRACHLOROETHENE		NR	0.035	7.70E-05	NR	—	0.006	1.83E-05	9.53E-05	1.058	9.00E-05	<0.01	0.01%
FLUORANTHENE	X	NR	0.284	0.001	0.689	6.82E-05	ND	—	0.001	9.449	7.26E-05	<0.01	0.01%
BENZO(a)ANTHRACENE	X	NR	0.004	8.20E-06	0.334	3.31E-05	ND	—	4.13E-05	0.773	5.34E-05	<0.01	0.01%
BENZO(b)FLUORANTHENE	X	NR	0.001	3.09E-06	0.337	3.33E-05	ND	—	3.64E-05	0.773	4.71E-05	<0.01	0.01%
BENZO(k)FLUORANTHENE	X	NR	ND	—	0.311	3.08E-05	ND	—	3.08E-05	0.773	3.98E-05	<0.01	<0.01%

Summary of Ecotoxicological Risk to Mule Deer in the OU2 903 Pad Source Area at RFETS

MULE DEER OU2 903 PAD		EXPOSURE POINT							SUMMARY				
		Vegetation			Surficial Soil		Surface Water						
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	HQ	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU2	IR = 0.022 SUF = 0.099			IR = 0.001 SUF = 0.099		IR = 0.044 SUF = 0.066						
CHROMIUM	X	5.509		0.012	26.789	0.003	0.011	3.30E-05	0.015	476.065	3.08E-05	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	ND	—	0.188	1.86E-05	ND	—	1.86E-05	0.773	2.41E-05	<0.01	<0.01%
1,2-DICHLOROETHENE		NR	0.022	4.70E-05	NR	—	0.011	3.32E-05	8.03E-05	3.417	2.35E-05	<0.01	<0.01%
PHENANTHRENE	X	NR	0.716	0.002	0.556	5.50E-05	ND	—	0.002	77.285	2.09E-05	<0.01	<0.01%
2-BUTANONE		NR	2.668	0.006	NR	—	ND	—	0.006	303.372	1.92E-05	<0.01	<0.01%
1,1-DICHLOROETHENE		NR	0.010	2.19E-05	NR	—	ND	—	2.19E-05	1.416	1.54E-05	<0.01	<0.01%
BUTYL BENZYL PHTHALATE		NR	0.035	7.57E-05	ND	—	ND	—	7.57E-05	6.061	1.25E-05	<0.01	<0.01%
BENZYL ALCOHOL		NR	ND	—	ND	—	0.004	1.16E-05	1.16E-05	1.773	6.55E-06	<0.01	<0.01%
CHRYSENE	X	NR	0.007	1.45E-05	0.341	3.37E-05	ND	—	4.82E-05	7.728	6.24E-06	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	0.061	1.33E-04	0.353	3.50E-05	0.002	5.81E-06	1.74E-04	42.527	4.08E-06	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	ND	—	0.191	1.89E-05	ND	—	1.89E-05	7.728	2.45E-06	<0.01	<0.01%
FLUORENE		NR	ND	—	0.190	1.88E-05	ND	—	1.88E-05	9.449	1.99E-06	<0.01	<0.01%
ANTHRACENE		NR	0.009	2.06E-05	0.201	1.99E-05	ND	—	4.04E-05	75.590	5.35E-07	<0.01	<0.01%
ACENAPHTHENE		NR	0.010	2.18E-05	0.186	1.84E-05	ND	—	4.02E-05	77.285	5.20E-07	<0.01	<0.01%
1,1,1-TRICHLOROETHANE		NR	0.014	3.15E-05	NR	—	ND	—	3.15E-05	81.354	3.87E-07	<0.01	<0.01%

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Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp Point Conc = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mule Deer in the OU1 881 Hillside Source Area at RFETS

MULE DEER OU1 881 HILLSIDE		EXPOSURE POINT							SUMMARY			
		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU1	IR = 0.022 SUF = 0.079			IR = 0.001 SUF = 0.001		IR = 0.044 SUF = 0.130					
ACETONE		NR	271.965	0.473	NR	—	0.007	2.03E-05	0.473	1.739	0.27	44.35%
ALUMINUM		NR		—	14308.320	1.130	0.926	0.003	1.133	21.331	0.05	8.67%
CADMIUM		1.409		0.002	0.611	4.83E-05	0.002	4.67E-06	0.003	0.048	0.05	8.49%
SELENIUM		1.500		0.003	0.511	4.04E-05	0.002	5.67E-06	0.003	0.054	0.05	7.97%
TOLUENE	X	NR	43.577	0.076	NR	—	0.003	7.65E-06	0.076	2.008	0.04	6.15%
AROCLOR-1248	X	NR	0.082	1.43E-04	0.123	9.74E-06	ND	—	1.52E-04	0.004	0.04	5.98%
METHYLENE CHLORIDE		NR	14.721	0.026	NR	—	0.004	1.10E-05	0.026	1.018	0.03	4.10%
4-METHYL-2-PENTANONE		NR	33.985	0.059	NR	—	ND	—	0.059	4.348	0.01	2.22%
AROCLOR-1254	X	NR	0.037	6.37E-05	0.257	2.03E-05	ND	—	8.41E-05	0.009	0.01	1.47%
VANADIUM		NR		—	41.858	0.003	0.009	2.56E-05	0.003	0.399	0.01	1.36%
BARIUM		NR		—	179.137	0.014	0.123	3.58E-04	0.015	2.154	0.01	1.10%
COPPER		9.256		0.016	35.484	0.003	0.009	2.72E-05	0.019	2.880	0.01	1.07%
MAGNESIUM		NR		—	3418.568	0.270	13.583	0.039	0.310	46.422	0.01	1.09%
BIS(2-ETHYLHEXYL)PHTHALATE		NR	3.395	0.006	ND	—	0.002	5.81E-06	0.006	1.417	<0.01	0.68%
LEAD		1.100		0.002	48.003	0.004	0.003	1.01E-05	0.006	1.391	<0.01	0.67%
CHLOROFORM		NR	5.967	0.010	NR	—	ND	—	0.010	2.609	<0.01	0.65%
ARSENIC		NR		—	5.377	4.25E-04	0.002	5.93E-06	4.31E-04	0.120	<0.01	0.59%
ZINC		28.068		0.049	85.548	0.007	0.051	1.47E-04	0.056	27.830	<0.01	0.33%
MERCURY		ND		—	0.054	4.25E-06	1.18E-04	3.43E-07	4.59E-06	0.002	<0.01	0.31%
MANGANESE		NR		—	312.554	0.025	0.063	1.82E-04	0.025	15.306	<0.01	0.27%
BERYLLIUM		NR		—	1.257	9.93E-05	0.001	2.63E-06	1.02E-04	0.115	<0.01	0.15%
ANTIMONY		NR		—	ND	—	0.015	4.45E-05	4.45E-05	0.009	<0.01	0.78%
TIN		NR		—	43.094	0.003	0.024	6.90E-05	0.003	4.282	<0.01	0.13%
COBALT		NR		—	8.343	0.001	0.007	1.89E-05	0.001	0.856	<0.01	0.13%
2-BUTANONE		NR	119.240	0.207	NR	—	0.005	1.52E-05	0.207	303.372	<0.01	0.11%
NITRATE/NITRITE		NR		—	2.111	1.67E-04	2.624	0.008	0.008	2.251	<0.01	0.56%
PYRENE	X	NR	2.156	0.004	0.693	5.47E-05	ND	—	0.004	5.669	<0.01	0.11%
LITHIUM		NR		—	9.473	0.001	0.021	5.95E-05	0.001	1.633	<0.01	0.08%
BENZO(a)PYRENE	X	NR	0.006	1.10E-05	0.311	2.46E-05	ND	—	3.56E-05	0.077	<0.01	0.08%
THALLIUM		NR		—	0.510	4.03E-05	0.002	5.70E-06	4.60E-05	0.114	<0.01	0.07%
NICKEL		NR		—	29.863	0.002	0.008	2.21E-05	0.002	6.957	<0.01	0.06%
FLUORANTHENE	X	NR	1.763	0.003	0.762	6.02E-05	ND	—	0.003	9.449	<0.01	0.05%
SILVER		0.540		0.001	ND	—	0.003	9.90E-06	0.001	3.806	<0.01	0.04%
STRONTIUM		NR		—	61.651	0.005	0.413	0.001	0.006	45.745	<0.01	0.02%
PHENANTHRENE	X	NR	4.472	0.008	0.559	4.42E-05	ND	—	0.008	77.285	<0.01	0.02%
DIBENZO(a,h)ANTHRACENE	X	NR	ND	—	0.092	7.27E-06	ND	—	7.27E-06	0.077	<0.01	0.02%
MOLYBDENUM		NR		—	1.926	1.52E-04	0.018	5.08E-05	2.03E-04	2.200	<0.01	0.02%
PENTACHLOROPHENOL		NR	0.019	3.34E-05	ND	—	ND	—	3.34E-05	0.514	<0.01	0.01%
BENZO(a)ANTHRACENE	X	NR	0.008	1.39E-05	0.327	2.58E-05	ND	—	3.97E-05	0.773	<0.01	0.01%

Summary of Ecotoxicological Risk to Mule De.. in the OU1 881 Hillside Source Area at RFETS

MULE DEER OU1 881 HILLSIDE		EXPOSURE POINT							SUMMARY			
		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU1	IR = 0.022 SUF = 0.079			IR = 0.001 SUF = 0.001		IR = 0.044 SUF = 0.130					
1,1-DICHLOROETHENE	X	NR	0.040	6.98E-05	NR	—	0.003	7.35E-06	7.71E-05	1.416	<0.01	0.01%
BENZO(b)FLUORANTHENE	X	NR	0.002	4.19E-06	0.314	2.48E-05	ND	—	2.90E-05	0.773	<0.01	0.01%
BENZO(k)FLUORANTHENE	X	NR	0.002	3.40E-06	0.297	2.35E-05	ND	—	2.69E-05	0.773	<0.01	0.01%
TRICHLOROETHENE	X	NR	0.187	3.25E-04	NR	—	0.003	7.50E-06	3.32E-04	11.105	<0.01	<0.01%
TETRACHLOROETHENE	X	NR	0.015	2.63E-05	NR	—	0.003	8.19E-06	3.44E-05	1.058	<0.01	<0.01%
CHROMIUM		5.535		0.010	34.997	0.003	0.004	1.15E-05	0.012	476.065	<0.01	<0.01%
TOTAL XYLENES	X	NR	0.002	2.86E-06	NR	—	0.001	2.90E-06	5.76E-06	0.159	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	ND	—	0.204	1.61E-05	ND	—	1.61E-05	0.773	<0.01	<0.01%
1,2-DICHLOROETHANE	X	NR	0.027	4.69E-05	NR	—	0.003	7.72E-06	5.47E-05	4.068	<0.01	<0.01%
BENZYL ALCOHOL		NR	ND	—	0.203	1.61E-05	ND	—	1.61E-05	1.773	<0.01	<0.01%
FLUORENE	X	NR	0.028	4.91E-05	0.193	1.52E-05	ND	—	6.43E-05	9.449	<0.01	<0.01%
CHRYSENE	X	NR	0.012	2.16E-05	0.361	2.85E-05	ND	—	5.01E-05	7.728	<0.01	<0.01%
DI-n-BUTYL PHTHALATE		NR	0.056	9.68E-05	ND	—	ND	—	9.68E-05	42.527	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	ND	—	0.205	1.62E-05	ND	—	1.62E-05	7.728	<0.01	<0.01%
ACENAPHTHENE	X	NR	0.040	6.90E-05	0.195	1.54E-05	ND	—	8.44E-05	77.285	<0.01	<0.01%
NAPHTHALENE	X	NR	0.040	7.00E-05	0.110	8.69E-06	ND	—	7.87E-05	77.285	<0.01	<0.01%
ANTHRACENE	X	NR	0.027	4.69E-05	0.202	1.60E-05	ND	—	6.29E-05	75.590	<0.01	<0.01%
1,2-DICHLOROETHENE	X	NR	ND	—	NR	—	0.002	5.81E-06	5.81E-06	3.417	<0.01	<0.01%
ALDRIN		NR	ND	—	ND	—	1.00E-05	2.90E-08	2.90E-08	0.034	<0.01	<0.01%
DI-n-OCTYL PHTHALATE		NR	0.009	1.59E-05	ND	—	ND	—	1.59E-05	79.055	<0.01	<0.01%
1,1,1-TRICHLOROETHANE	X	NR	0.007	1.26E-05	NR	—	0.003	7.30E-06	1.99E-05	81.354	<0.01	<0.01%
1,1-DICHLOROETHANE	X	NR	ND	—	NR	—	0.003	7.29E-06	7.29E-06	19.699	<0.01	<0.01%

HAZARD INDEX 0.61

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mule Deer ... the OU2 East Trenches Source Area at RFETS

MULE DEER OU2 EAST TRENCHES		EXPOSURE POINT							SUMMARY			
		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU2	IR = 0.022 SUF = 0.143			IR = 0.001 SUF = 0.143		IR = 1 SUF = 1					
ACETONE		NR	86.139	0.271	NR	—	NR	—	0.271	1.739	0.16	26.36%
CADMIUM		2.217		0.007	1.400	2.00E-04	NR	—	0.007	0.048	0.15	25.24%
TETRACHLOROETHENE		NR	37.359	0.118	NR	—	NR	—	0.118	1.058	0.11	18.79%
ALUMINUM		NR		—	12216.913	1.747	NR	—	1.747	21.331	0.08	13.86%
METHYLENE CHLORIDE		NR	6.373	0.020	NR	—	NR	—	0.020	1.018	0.02	3.33%
COPPER		10.430		0.033	13.080	0.002	NR	—	0.035	2.880	0.01	2.04%
VANADIUM		NR		—	27.790	0.004	NR	—	0.004	0.399	0.01	1.69%
BARIUM		NR		—	128.840	0.018	NR	—	0.018	2.154	0.01	1.45%
LEAD	X	1.509		0.005	45.985	0.007	NR	—	0.011	1.391	0.01	1.38%
MAGNESIUM		NR		—	2431.742	0.348	NR	—	0.348	46.422	0.01	1.27%
ARSENIC		NR		—	5.496	0.001	NR	—	0.001	0.120	0.01	1.11%
ZINC		33.840		0.106	54.004	0.008	NR	—	0.114	27.830	<0.01	0.69%
MANGANESE		NR		—	310.494	0.044	NR	—	0.044	15.306	<0.01	0.49%
TOTAL XYLENES		NR	0.126	3.96E-04	NR	—	NR	—	3.96E-04	0.159	<0.01	0.42%
CHLOROFORM		NR	1.310	0.004	NR	—	NR	—	0.004	2.609	<0.01	0.27%
SELENIUM		ND		—	0.510	7.29E-05	NR	—	7.29E-05	0.054	<0.01	0.23%
COBALT		NR		—	7.136	0.001	NR	—	0.001	0.856	<0.01	0.20%
LITHIUM		NR		—	13.267	0.002	NR	—	0.002	1.633	<0.01	0.20%
TIN		NR		—	34.188	0.005	NR	—	0.005	4.282	<0.01	0.19%
AROCLOR-1254	X	NR	0.003	8.68E-06	ND	—	NR	—	8.68E-06	0.009	<0.01	0.16%
BERYLLIUM		NR		—	0.590	8.44E-05	NR	—	8.44E-05	0.115	<0.01	0.12%
TOLUENE		NR	0.453	0.001	NR	—	NR	—	0.001	2.008	<0.01	0.12%
SILVER		0.520		0.002	1.200	1.72E-04	NR	—	0.002	3.806	<0.01	0.08%
TRICHLOROETHENE		NR	1.663	0.005	NR	—	NR	—	0.005	11.105	<0.01	0.08%
BENZO(a)PYRENE	X	NR	0.002	7.32E-06	0.120	1.72E-05	NR	—	2.45E-05	0.077	<0.01	0.05%
NICKEL		NR		—	11.629	0.002	NR	—	0.002	6.957	<0.01	0.04%
1,2-DICHLOROETHENE		NR	0.216	0.001	NR	—	NR	—	0.001	3.417	<0.01	0.03%
4-METHYL-2-PENTANONE		NR	0.191	0.001	NR	—	NR	—	0.001	4.348	<0.01	0.02%
STRONTIUM		NR		—	34.852	0.005	NR	—	0.005	45.745	<0.01	0.02%
1,1-DICHLOROETHENE		NR	0.030	9.47E-05	NR	—	NR	—	9.47E-05	1.416	<0.01	0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	0.024	7.45E-05	0.076	1.09E-05	NR	—	8.54E-05	1.417	<0.01	0.01%
CHROMIUM	X	7.227		0.023	12.981	0.002	NR	—	0.025	476.065	<0.01	0.01%
BENZENE		NR	0.032	1.02E-04	NR	—	NR	—	1.02E-04	2.038	<0.01	0.01%
BENZO(b)FLUORANTHENE	X	NR	0.001	3.55E-06	0.160	2.29E-05	NR	—	2.64E-05	0.773	<0.01	0.01%
1,1,1-TRICHLOROETHANE		NR	0.813	0.003	NR	—	NR	—	0.003	81.354	<0.01	0.01%
BENZO(a)ANTHRACENE	X	NR	0.003	8.37E-06	0.062	8.87E-06	NR	—	1.72E-05	0.773	<0.01	<0.01%
2-BUTANONE		NR	1.787	0.006	NR	—	NR	—	0.006	303.372	<0.01	<0.01%
PYRENE	X	NR	0.009	2.77E-05	0.218	3.12E-05	NR	—	5.89E-05	5.669	<0.01	<0.01%
FLUORENE		NR	0.026	8.02E-05	ND	—	NR	—	8.02E-05	9.449	<0.01	<0.01%
FLUORANTHENE	X	NR	0.007	2.19E-05	0.229	3.27E-05	NR	—	5.46E-05	9.449	<0.01	<0.01%
NAPHTHALENE		NR	0.093	2.94E-04	ND	—	NR	—	2.94E-04	77.285	<0.01	<0.01%

Summary of Ecotoxicological Risk to Mule Deer ... the OU2 East Trenches Source Area at RFETS

MULE DEER OU2 EAST TRENCHES		EXPOSURE POINT							SUMMARY			
		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU2	IR = 0.022 SUF = 0.143			IR = 0.001 SUF = 0.143		IR = I SUF = I					
CHRYSENE	X	NR	0.004	1.22E-05	0.110	1.57E-05	NR	—	2.79E-05	7.728	<0.01	<0.01%
4,4'-DDT	X	NR	1.15E-04	3.60E-07	ND	—	NR	—	3.60E-07	0.139	<0.01	<0.01%
2-METHYLNAPHTHALENE		NR	0.060	1.90E-04	ND	—	NR	—	1.90E-04	77.285	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	0.017	5.28E-05	ND	—	NR	—	5.28E-05	42.527	<0.01	<0.01%
PHENANTHRENE	X	NR	0.024	7.43E-05	0.091	1.30E-05	NR	—	8.73E-05	77.285	<0.01	<0.01%
ACENAPHTHENE		NR	0.027	8.63E-05	ND	—	NR	—	8.63E-05	77.285	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	2.38E-04	7.50E-07	ND	—	NR	—	7.50E-07	0.773	<0.01	<0.01%
ANTHRACENE		NR	0.018	5.63E-05	ND	—	NR	—	5.63E-05	75.590	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	0.001	1.67E-06	ND	—	NR	—	1.67E-06	7.728	<0.01	<0.01%

HAZARD INDEX 0.59

Notes:

RFETS = Rocky Flats Environmental Technology Site
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OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mule Deer in the OU6 Soil Dump Areas Source Area at RFETS

MULE DEER OU6 SOIL DUMP AREAS		EXPOSURE POINT							SUMMARY			
		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU6	IR = 0.022 SUF = 0.065			IR = 0.001 SUF = 0.065		IR = 1 SUF = 1					
SELENIUM		6.623		0.009	ND	—	NR	—	0.009	0.054	0.17	40.74%
MERCURY	X	0.090		1.29E-04	0.139	9.03E-06	NR	—	1.38E-04	0.002	0.06	13.40%
MAGNESIUM	X	1537.931		2.199	2354.730	0.153	NR	—	2.352	46.422	0.05	11.84%
ALUMINUM		141.997		0.203	9659.033	0.628	NR	—	0.831	21.331	0.04	9.10%
CADMIUM		0.640		0.001	3.054	1.98E-04	NR	—	0.001	0.048	0.02	5.41%
BARIUM	X	21.085		0.030	117.141	0.008	NR	—	0.038	2.154	0.02	4.09%
LITHIUM		16.100		0.023	9.142	0.001	NR	—	0.024	1.633	0.01	3.38%
ACETONE	X	NR	11.617	0.017	NR	—	NR	—	0.017	1.739	0.01	2.23%
VANADIUM	X	0.710		0.001	26.996	0.002	NR	—	0.003	0.399	0.01	1.62%
MANGANESE	X	48.491		0.069	244.118	0.016	NR	—	0.085	15.306	0.01	1.30%
MOLYBDENUM	X	8.400		0.012	ND	—	NR	—	0.012	2.200	0.01	1.28%
COPPER	X	8.057		0.012	15.408	0.001	NR	—	0.013	2.880	<0.01	1.02%
AROCLOR-1254	X	NR	ND	—	0.429	2.79E-05	NR	—	2.79E-05	0.009	<0.01	0.70%
NICKEL	X	12.700		0.018	11.325	0.001	NR	—	0.019	6.957	<0.01	0.63%
ARSENIC	X	ND		—	4.989	3.24E-04	NR	—	3.24E-04	0.120	<0.01	0.63%
STRONTIUM	X	80.644		0.115	37.401	0.002	NR	—	0.118	45.745	<0.01	0.60%
LEAD	X	1.224		0.002	24.511	0.002	NR	—	0.003	1.391	<0.01	0.56%
ZINC	X	32.108		0.046	94.049	0.006	NR	—	0.052	27.830	<0.01	0.44%
TIN		4.400		0.006	22.063	0.001	NR	—	0.008	4.282	<0.01	0.42%
COBALT	X	ND		—	6.279	4.08E-04	NR	—	4.08E-04	0.856	<0.01	0.11%
BENZO(a)PYRENE	X	NR	0.002	2.45E-06	0.495	3.22E-05	NR	—	3.46E-05	0.077	<0.01	0.10%
BERYLLIUM		ND		—	0.621	4.03E-05	NR	—	4.03E-05	0.115	<0.01	0.08%
NITRATE/NITRITE		NR		—	7.689	5.00E-04	NR	—	5.00E-04	2.251	<0.01	0.05%
BENZO(k)FLUORANTHENE	X	NR	2.55E-04	3.60E-07	2.200	1.43E-04	NR	—	1.43E-04	0.773	<0.01	0.04%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	0.050	7.20E-05	2.270	1.48E-04	NR	—	2.20E-04	1.417	<0.01	0.04%
THALLIUM		ND		—	0.260	1.69E-05	NR	—	1.69E-05	0.114	<0.01	0.03%
DIBENZO(a,h)ANTHRACENE	X	NR	ND	—	0.130	8.45E-06	NR	—	8.45E-06	0.077	<0.01	0.03%
PENTACHLOROPHENOL		NR	0.032	4.65E-05	ND	—	NR	—	4.65E-05	0.514	<0.01	0.02%
TOLUENE	X	NR	0.112	1.61E-04	NR	—	NR	—	1.61E-04	2.008	<0.01	0.02%
BENZO(b)FLUORANTHENE	X	NR	0.001	1.50E-06	0.855	5.56E-05	NR	—	5.71E-05	0.773	<0.01	0.02%
BENZO(a)ANTHRACENE	X	NR	0.001	2.13E-06	0.526	3.42E-05	NR	—	3.63E-05	0.773	<0.01	0.01%
PHENOL	X	NR	0.305	4.36E-04	ND	—	NR	—	4.36E-04	10.278	<0.01	0.01%
2-BUTANONE	X	NR	7.542	0.011	NR	—	NR	—	0.011	303.372	<0.01	0.01%
METHYLENE CHLORIDE	X	NR	0.021	2.95E-05	NR	—	NR	—	2.95E-05	1.018	<0.01	0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	1.36E-04	1.90E-07	0.334	2.17E-05	NR	—	2.19E-05	0.773	<0.01	0.01%
PYRENE	X	NR	0.008	1.18E-05	1.337	8.69E-05	NR	—	9.87E-05	5.669	<0.01	<0.01%
4-METHYL-2-PENTANONE	X	NR	0.036	5.19E-05	NR	—	NR	—	5.19E-05	4.348	<0.01	<0.01%
FLUORANTHENE	X	NR	0.007	1.06E-05	1.376	8.94E-05	NR	—	1.00E-04	9.449	<0.01	<0.01%
TOTAL XYLENES		NR	0.001	1.57E-06	NR	—	NR	—	1.57E-06	0.159	<0.01	<0.01%

Summary of Ecotoxicological Risk to Mule Deer ... the OU6 Soil Dump Areas Source Area at RFETS

MULE DEER OU6 SOIL DUMP AREAS		EXPOSURE POINT							SUMMARY			
		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU6	IR = 0.022 SUF = 0.065			IR = 0.001 SUF = 0.065		IR = I SUF = I					
TETRACHLOROETHENE	X	NR	0.004	5.98E-06	NR	—	NR	—	5.98E-06	1.058	<0.01	<0.01%
CHRYSENE	X	NR	0.003	3.80E-06	0.577	3.75E-05	NR	—	4.13E-05	7.728	<0.01	<0.01%
BENZENE	X	NR	0.007	9.89E-06	NR	—	NR	—	9.89E-06	2.038	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	ND	—	0.292	1.90E-05	NR	—	1.90E-05	7.728	<0.01	<0.01%
CHROMIUM	X	ND		—	15.651	0.001	NR	—	0.001	476.065	<0.01	<0.01%
FLUORENE	X	NR	ND	—	0.232	1.51E-05	NR	—	1.51E-05	9.449	<0.01	<0.01%
PHENANTHRENE	X	NR	0.016	2.30E-05	1.056	6.87E-05	NR	—	9.16E-05	77.285	<0.01	<0.01%
BUTYL BENZYL PHTHALATE	X	NR	ND	—	0.072	4.68E-06	NR	—	4.68E-06	6.061	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	ND	—	0.473	3.07E-05	NR	—	3.07E-05	42.527	<0.01	<0.01%
DI-n-OCTYL PHTHALATE	X	NR	6.60E-05	9.00E-08	0.658	4.28E-05	NR	—	4.29E-05	79.055	<0.01	<0.01%
ACENAPHTHENE	X	NR	0.009	1.27E-05	0.244	1.59E-05	NR	—	2.86E-05	77.285	<0.01	<0.01%
ANTHRACENE	X	NR	ND	—	0.382	2.48E-05	NR	—	2.48E-05	75.590	<0.01	<0.01%
NAPHTHALENE	X	NR	ND	—	0.110	7.15E-06	NR	—	7.15E-06	77.285	<0.01	<0.01%

HAZARD INDEX 0.43

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mule Deer in the OU5 Ash Pits Source Area at RFETS

MULE DEER OU5 ASH PITS		EXPOSURE POINT							SUMMARY			
		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC In OU5	IR = 0.022 SUF = 0.067			IR = 0.001 SUF = 0.067		IR = 0.044 SUF = 0.063					
CADMIUM		2.179		0.003	1.349	9.04E-05	0.001	2.90E-06	0.003	0.048	0.07	20.51%
ALUMINUM		264.435		0.390	13038.844	0.874	0.855	0.002	1.266	21.331	0.06	17.71%
MAGNESIUM		1466.885		2.162	2929.961	0.196	6.862	0.020	2.378	46.422	0.05	15.29%
BARIUM	X	66.746		0.098	143.888	0.010	0.071	2.05E-04	0.108	2.154	0.05	14.99%
MERCURY	X	0.073		1.08E-04	0.078	5.21E-06	1.10E-04	3.19E-07	1.13E-04	0.002	0.05	14.07%
VANADIUM		2.300		0.003	36.213	0.002	0.009	2.50E-05	0.006	0.399	0.01	4.37%
ARSENIC		0.840		0.001	5.715	3.83E-04	0.002	6.06E-06	0.002	0.120	0.01	4.05%
MANGANESE		42.730		0.063	337.520	0.023	0.148	4.29E-04	0.086	15.306	0.01	1.68%
COPPER	X	7.604		0.011	16.938	0.001	0.006	1.64E-05	0.012	2.880	<0.01	1.28%
LEAD	X	1.581		0.002	33.783	0.002	0.004	1.10E-05	0.005	1.391	<0.01	0.99%
NICKEL		14.803		0.022	13.578	0.001	0.009	2.53E-05	0.023	6.957	<0.01	0.98%
ZINC	X	29.216		0.043	69.631	0.005	0.018	5.20E-05	0.048	27.830	<0.01	0.51%
BERYLLIUM		0.084		1.24E-04	0.940	6.30E-05	0.001	3.98E-06	1.91E-04	0.115	<0.01	0.50%
STRONTIUM	X	45.069		0.066	38.768	0.003	0.247	0.001	0.070	45.745	<0.01	0.45%
TIN		3.200		0.005	16.661	0.001	0.019	5.49E-05	0.006	4.282	<0.01	0.41%
COBALT	X	ND		—	8.402	0.001	0.007	2.13E-05	0.001	0.856	<0.01	0.20%
SELENIUM		ND		—	0.410	2.75E-05	0.001	3.19E-06	3.07E-05	0.054	<0.01	0.17%
LITHIUM	X	ND		—	10.380	0.001	0.009	2.53E-05	0.001	1.633	<0.01	0.13%
ANTIMONY	X	ND		—	ND	—	0.015	4.46E-05	4.46E-05	0.009	<0.01	1.43%
SILVER	X	0.970		0.001	1.807	1.21E-04	0.003	9.35E-06	0.002	3.806	<0.01	0.12%
THALLIUM		ND		—	0.520	3.48E-05	ND	—	3.48E-05	0.114	<0.01	0.09%
NITRATE/NITRITE		NR		—	NR	—	0.088	2.57E-04	2.57E-04	2.251	<0.01	0.03%
MOLYBDENUM		ND		—	0.928	6.22E-05	0.020	5.73E-05	1.19E-04	2.200	<0.01	0.02%
ACETONE		NR	NR	—	NR	—	0.009	2.60E-05	2.60E-05	1.739	<0.01	<0.01%
METHYLENE CHLORIDE	X	NR	NR	—	NR	—	0.005	1.38E-05	1.38E-05	1.018	<0.01	<0.01%
CHROMIUM		1.900		0.003	15.956	0.001	0.004	1.13E-05	0.004	476.065	<0.01	<0.01%
1,2-DICHLOROETHANE		NR	NR	—	NR	—	0.003	8.92E-06	8.92E-06	4.068	<0.01	<0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	NR	—	NR	—	0.001	2.90E-06	2.90E-06	1.417	<0.01	<0.01%

HAZARD INDEX 0.34

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
! = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mule Deer in the OU5 Old Landfill Source Area at RFETS

MULE DEER OU5 OLD LANDFILL		EXPOSURE POINT							SUMMARY				
		Vegetation			Surficial Soil		Surface Water						
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	HQ	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU5	IR = 0.022 SUF = 0.048			IR = 0.001 SUF = 0.048		IR = 0.044 SUF = 0.096						
MAGNESIUM		2448.896		2.586	2298.534	0.110	19.837	0.058	2.754	46.422	0.06	0.06	19.81%
ANTIMONY	X	ND		—	8.677	4.17E-04	0.015	4.41E-05	4.61E-04	0.009	0.05	0.05	16.52%
CADMIUM		1.900		0.002	0.880	4.23E-05	0.002	4.65E-06	0.002	0.048	0.04	0.04	14.25%
BARIUM	X	66.461		0.070	115.593	0.006	0.162	4.70E-04	0.076	2.154	0.04	0.04	11.81%
ALUMINUM		199.127		0.210	11074.656	0.532	1.471	0.004	0.746	21.331	0.03	0.03	11.68%
SELENIUM		1.400		0.001	0.459	2.20E-05	0.003	7.33E-06	0.002	0.054	0.03	0.03	9.27%
ARSENIC		0.590		0.001	5.702	2.74E-04	0.002	6.21E-06	0.001	0.120	0.01	0.01	2.52%
VANADIUM		1.400		0.001	30.425	0.001	0.008	2.38E-05	0.003	0.399	0.01	0.01	2.48%
MOLYBDENUM		8.700		0.009	4.400	2.11E-04	0.004	1.28E-05	0.009	2.200	4.28E-03	<0.01	1.43%
MANGANESE		47.237		0.050	277.661	0.013	0.061	1.78E-04	0.063	15.306	4.14E-03	<0.01	1.38%
COPPER	X	7.863		0.008	37.703	0.002	0.006	1.65E-05	0.010	2.880	3.52E-03	<0.01	1.17%
AROCLOR-1254	X	NR	0.001	1.53E-06	0.572	2.75E-05	ND	—	2.90E-05	0.009	3.11E-03	<0.01	1.04%
MERCURY	X	ND		—	0.124	5.94E-06	1.11E-04	3.22E-07	6.26E-06	0.002	2.61E-03	<0.01	0.87%
LEAD	X	1.683		0.002	28.695	0.001	0.004	1.16E-05	0.003	1.391	2.28E-03	<0.01	0.76%
BENZO(a)PYRENE	X	NR	0.030	3.18E-05	2.636	1.27E-04	ND	—	1.58E-04	0.077	2.05E-03	<0.01	0.68%
NITRATE/NITRITE		NR		—	NR	—	1.490	0.004	0.004	2.251	1.92E-03	<0.01	0.64%
STRONTIUM	X	79.000		0.083	30.813	0.001	0.484	0.001	0.086	45.745	1.89E-03	<0.01	0.63%
ZINC	X	44.205		0.047	66.571	0.003	0.022	6.49E-05	0.050	27.830	1.79E-03	<0.01	0.60%
NICKEL		8.000		0.008	14.939	0.001	0.009	2.74E-05	0.009	6.957	1.32E-03	<0.01	0.44%
LITHIUM	X	1.100		0.001	8.005	3.84E-04	0.013	3.74E-05	0.002	1.633	9.69E-04	<0.01	0.32%
ACETONE		NR	1.397	0.001	ND	—	0.022	6.46E-05	0.002	1.739	8.85E-04	<0.01	0.30%
TIN		2.100		0.002	9.714	4.66E-04	0.021	6.10E-05	0.003	4.282	6.41E-04	<0.01	0.21%
DIBENZO(a,h)ANTHRACENE	X	NR	0.003	3.29E-06	0.758	3.64E-05	ND	—	3.97E-05	0.077	5.14E-04	<0.01	0.17%
COBALT	X	ND		—	8.348	4.01E-04	0.002	5.81E-06	4.06E-04	0.856	4.75E-04	<0.01	0.16%
BERYLLIUM		ND		—	0.882	4.23E-05	0.001	2.75E-06	4.51E-05	0.115	3.93E-04	<0.01	0.13%
SILVER	X	1.000		0.001	7.180	3.45E-04	0.003	1.01E-05	0.001	3.806	3.71E-04	<0.01	0.12%
BENZO(a)ANTHRACENE	X	NR	0.038	4.00E-05	2.850	1.37E-04	ND	—	1.77E-04	0.773	2.29E-04	<0.01	0.08%
BENZO(b)FLUORANTHENE	X	NR	0.016	1.67E-05	3.179	1.53E-04	ND	—	1.69E-04	0.773	2.19E-04	<0.01	0.07%
THALLIUM		ND		—	0.310	1.49E-05	0.002	5.75E-06	2.06E-05	0.114	1.81E-04	<0.01	0.06%
INDENO(1,2,3-cd)PYRENE	X	NR	0.001	1.26E-06	2.572	1.23E-04	ND	—	1.25E-04	0.773	1.61E-04	<0.01	0.05%
DIELDRIN	X	NR	ND	—	0.009	4.40E-07	ND	—	4.40E-07	0.003	1.28E-04	<0.01	0.04%
ENDRIN KETONE	X	NR	NO LOG K_{OW}	—	0.009	4.50E-07	ND	—	4.50E-07	0.004	1.14E-04	<0.01	0.04%
BENZO(k)FLUORANTHENE	X	NR	0.005	5.01E-06	1.694	8.13E-05	ND	—	8.63E-05	0.773	1.12E-04	<0.01	0.04%
PYRENE	X	NR	0.201	2.12E-04	7.090	3.40E-04	ND	—	0.001	5.669	9.75E-05	<0.01	0.03%
PHENOL	X	NR	0.777	0.001	ND	—	ND	—	0.001	10.278	7.98E-05	<0.01	0.03%
FLUORANTHENE	X	NR	0.208	2.19E-04	8.267	3.97E-04	ND	—	0.001	9.449	6.52E-05	<0.01	0.02%
METHYLENE CHLORIDE	X	NR	0.042	4.38E-05	ND	—	0.003	8.89E-06	5.27E-05	1.018	5.18E-05	<0.01	0.02%
PENTACHLOROPHENOL	X	NR	0.008	8.32E-06	ND	—	0.005	1.45E-05	2.28E-05	0.514	4.44E-05	<0.01	0.01%
FLUORENE	X	NR	0.268	2.83E-04	2.363	1.13E-04	ND	—	3.96E-04	9.449	4.20E-05	<0.01	0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	0.023	2.43E-05	0.210	1.01E-05	0.002	5.81E-06	4.02E-05	1.417	2.84E-05	<0.01	0.01%
CHRYSENE	X	NR	0.061	6.41E-05	2.987	1.43E-04	ND	—	2.07E-04	7.728	2.68E-05	<0.01	0.01%

Summary of Ecotoxicological Risk to Mule Deer in the OU5 Old Landfill Source Area at RFETS

MULE DEER OU5 OLD LANDFILL		EXPOSURE POINT							SUMMARY				
		Vegetation			Surficial Soil		Surface Water						
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	HQ	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU5	IR = 0.022 SUF = 0.048			IR = 0.001 SUF = 0.048		IR = 0.044 SUF = 0.096						
HEPTACHLOR EPOXIDE	X	NR	0.001	1.37E-06	0.004	2.10E-07	ND	—	1.58E-06	0.071	2.23E-05	<0.01	0.01%
TOTAL XYLENES		NR	0.003	3.44E-06	ND	—	ND	—	3.44E-06	0.159	2.16E-05	<0.01	0.01%
NAPHTHALENE	X	NR	1.297	0.001	2.498	1.20E-04	ND	—	0.001	77.285	1.93E-05	<0.01	0.01%
PHENANTHRENE	X	NR	0.610	0.001	9.640	4.63E-04	ND	—	0.001	77.285	1.43E-05	<0.01	<0.01%
TOLUENE	X	NR	0.027	2.81E-05	ND	—	ND	—	2.81E-05	2.008	1.40E-05	<0.01	<0.01%
TETRACHLOROETHENE		NR	0.013	1.36E-05	ND	—	ND	—	1.36E-05	1.058	1.29E-05	<0.01	<0.01%
CHROMIUM		3.600		0.004	13.088	0.001	0.004	1.24E-05	0.004	476.065	9.33E-06	<0.01	<0.01%
ENDOSULFAN SULFATE	X	NR	ND	—	0.009	4.20E-07	ND	—	4.20E-07	0.059	7.10E-06	<0.01	<0.01%
ALDRIN	X	NR	ND	—	0.005	2.20E-07	ND	—	2.20E-07	0.034	6.39E-06	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	0.002	2.45E-06	0.922	4.43E-05	ND	—	4.67E-05	7.728	6.05E-06	<0.01	<0.01%
BUTYL BENZYL PHTHALATE	X	NR	0.024	2.54E-05	0.220	1.06E-05	ND	—	3.60E-05	6.061	5.94E-06	<0.01	<0.01%
ANTHRACENE	X	NR	0.243	2.57E-04	2.816	1.35E-04	ND	—	3.92E-04	75.590	5.18E-06	<0.01	<0.01%
ACENAPHTHENE	X	NR	0.258	2.72E-04	2.636	1.27E-04	ND	—	3.99E-04	77.285	5.16E-06	<0.01	<0.01%
4-METHYL-2-PENTANONE		NR	0.018	1.92E-05	ND	—	ND	—	1.92E-05	4.348	4.41E-06	<0.01	<0.01%
ISOPHORONE	X	NR	0.344	3.63E-04	ND	—	ND	—	3.63E-04	84.965	4.28E-06	<0.01	<0.01%
METHOXYCHLOR	X	NR	ND	—	0.060	2.88E-06	ND	—	2.88E-06	0.685	4.20E-06	<0.01	<0.01%
4,4'-DDT	X	NR	ND	—	0.009	4.10E-07	ND	—	4.10E-07	0.139	2.96E-06	<0.01	<0.01%
CHLOROFORM		NR	ND	—	ND	—	0.003	7.36E-06	7.36E-06	2.609	2.82E-06	<0.01	<0.01%
TRICHLOROETHENE		NR	0.019	1.98E-05	ND	—	0.003	8.33E-06	2.81E-05	11.105	2.53E-06	<0.01	<0.01%
2-METHYLNAPHTHALENE	X	NR	0.141	1.49E-04	0.944	4.53E-05	ND	—	1.94E-04	77.285	2.52E-06	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	0.027	2.80E-05	0.200	9.60E-06	ND	—	3.76E-05	42.527	8.84E-07	<0.01	<0.01%
2-BUTANONE		NR	0.234	2.47E-04	ND	—	0.006	1.63E-05	2.64E-04	303.372	8.70E-07	<0.01	<0.01%
AROCLOR-1260		NR	0.001	6.70E-07	ND	—	ND	—	6.70E-07	1.182	5.67E-07	<0.01	<0.01%
DI-n-OCTYL PHTHALATE	X	NR	ND	—	0.083	3.98E-06	ND	—	3.98E-06	79.055	5.03E-08	<0.01	<0.01%
1,1,1-TRICHLOROETHANE		NR	0.003	3.06E-06	ND	—	ND	—	3.06E-06	81.354	3.76E-08	<0.01	<0.01%
									HAZARD INDEX		0.30	***0.30***	

Notes:

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I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mule Deer in the OU6 A-Ponds Source Area at RFETS

MULE DEER OU6 A-PONDS		EXPOSURE POINT							SUMMARY				
		Vegetation			Surficial Soil		Surface Water						
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	HQ	Hazard Quotient	Percent of Total Risk
Analyte	PCOC In OU6	IR = 0.022 SUF = 0.034			IR = 0.001 SUF = 0.034		IR = 0.044 SUF = 0.277						
MAGNESIUM	X	2252.596		1.685	1880.000	0.064	18.851	0.055	1.804	46.422	0.04	0.04	17.79%
SELENIUM		2.516		0.002	ND	—	0.003	9.53E-06	0.002	0.054	0.03	0.03	15.95%
MERCURY	X	0.090		6.73E-05	ND	—	1.49E-04	4.33E-07	6.78E-05	0.002	0.03	0.03	12.93%
CADMIUM		1.400		0.001	2.200	7.48E-05	0.001	2.79E-06	0.001	0.048	0.02	0.02	10.71%
ALUMINUM		238.686		0.179	7830.000	0.266	0.405	0.001	0.446	21.331	0.02	0.02	9.57%
LITHIUM		37.901		0.028	4.800	1.63E-04	0.031	8.88E-05	0.029	1.633	0.02	0.02	8.02%
BARIUM	X	40.567		0.030	100.000	0.003	0.062	1.80E-04	0.034	2.154	0.02	0.02	7.21%
VANADIUM	X	1.700		0.001	51.100	0.002	0.002	6.66E-06	0.003	0.399	0.01	0.01	3.46%
ARSENIC	X	0.920		0.001	2.200	7.48E-05	0.004	1.03E-05	0.001	0.120	0.01	0.01	2.96%
COPPER	X	24.122		0.018	5.000	1.70E-04	0.002	6.09E-06	0.018	2.880	0.01	0.01	2.90%
MANGANESE	X	42.435		0.032	1110.000	0.038	0.179	0.001	0.070	15.306	4.57E-03	<0.01	2.09%
ANTIMONY	X	ND		—	ND	—	0.009	2.57E-05	2.57E-05	0.009	2.76E-03	<0.01	1.26%
STRONTIUM	X	112.501		0.084	37.100	0.001	0.278	0.001	0.086	45.745	1.88E-03	<0.01	0.86%
TIN		5.798		0.004	93.300	0.003	ND	—	0.008	4.282	1.75E-03	<0.01	0.80%
ZINC	X	57.285		0.043	65.800	0.002	0.008	2.39E-05	0.045	27.830	1.62E-03	<0.01	0.74%
NICKEL	X	14.200		0.011	13.100	4.45E-04	0.003	8.07E-06	0.011	6.957	1.59E-03	<0.01	0.73%
LEAD	X	1.107		0.001	33.000	0.001	0.003	9.63E-06	0.002	1.391	1.41E-03	<0.01	0.65%
COBALT	X	1.000		0.001	7.100	2.41E-04	0.001	4.24E-06	0.001	0.856	1.16E-03	<0.01	0.53%
MOLYBDENUM	X	3.100		0.002	5.300	1.80E-04	0.003	8.94E-06	0.003	2.200	1.14E-03	<0.01	0.52%
BERYLLIUM		ND		—	1.300	4.42E-05	ND	—	4.42E-05	0.115	3.86E-04	<0.01	0.18%
ACETONE	X	NR	0.693	0.001	NR	—	ND	—	0.001	1.739	2.98E-04	<0.01	0.14%
4,4'-DDT		NR	NR	—	0.026	8.80E-07	NR	—	8.80E-07	0.139	6.34E-06	<0.01	<0.01%
TOLUENE	X	NR	0.016	1.19E-05	NR	—	ND	—	1.19E-05	2.008	5.93E-06	<0.01	<0.01%
METHYLENE CHLORIDE	X	NR	ND	—	NR	—	0.002	5.81E-06	5.81E-06	1.018	5.71E-06	<0.01	<0.01%
delta-BHC		NR	NR	—	0.023	7.80E-07	NR	—	7.80E-07	0.278	2.80E-06	<0.01	<0.01%
SILVER	X	ND		—	ND	—	0.002	5.41E-06	5.41E-06	3.806	1.42E-06	<0.01	<0.01%
CHROMIUM	X	ND		—	9.000	3.06E-04	0.002	4.73E-06	3.11E-04	476.065	6.53E-07	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	NR	—	ND	—	0.002	5.81E-06	5.81E-06	42.527	1.37E-07	<0.01	<0.01%
										HAZARD INDEX	0.22	***0.22***	

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mule Deer in the OU11 West Spray Field Source Area at RFETS

MULE DEER OU11 WEST SPRAY FIELD		EXPOSURE POINT							SUMMARY			
		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU11	IR = 0.022 SUF = 0.161			IR = 0.001 SUF = 0.161		IR = I SUF = I					
ALUMINUM		NR		—	12185.807	1.962	NR	—	1.962	21.331	0.09	43.49%
ANTIMONY		NR		—	3.500	0.001	NR	—	0.001	0.009	0.06	28.62%
VANADIUM		NR		—	30.669	0.005	NR	—	0.005	0.399	0.01	5.86%
ARSENIC		NR		—	8.032	0.001	NR	—	0.001	0.120	0.01	5.10%
BARIUM		NR		—	130.524	0.021	NR	—	0.021	2.154	0.01	4.61%
MAGNESIUM		NR		—	1746.670	0.281	NR	—	0.281	46.422	0.01	2.86%
LEAD		NR		—	46.092	0.007	NR	—	0.007	1.391	0.01	2.52%
MANGANESE		NR		—	332.865	0.054	NR	—	0.054	15.306	<0.01	1.66%
CADMIUM		NR		—	0.737	1.19E-04	NR	—	1.19E-04	0.048	<0.01	1.17%
SELENIUM		NR		—	0.509	8.20E-05	NR	—	8.20E-05	0.054	<0.01	0.71%
COBALT		NR		—	6.719	0.001	NR	—	0.001	0.856	<0.01	0.60%
NITRATE/NITRITE		NR		—	15.866	0.003	NR	—	0.003	2.251	<0.01	0.54%
LITHIUM		NR		—	10.111	0.002	NR	—	0.002	1.633	<0.01	0.47%
BERYLLIUM		NR		—	0.682	1.10E-04	NR	—	1.10E-04	0.115	<0.01	0.45%
COPPER		NR		—	13.023	0.002	NR	—	0.002	2.880	<0.01	0.34%
ACETONE		NR	0.296	0.001	NR	—	NR	—	0.001	1.739	<0.01	0.29%
THALLIUM		NR		—	0.270	4.35E-05	NR	—	4.35E-05	0.114	<0.01	0.18%
ZINC		NR		—	44.730	0.007	NR	—	0.007	27.830	<0.01	0.12%
NICKEL		NR		—	9.190	0.001	NR	—	0.001	6.957	<0.01	0.10%
MOLYBDENUM		NR		—	2.600	4.19E-04	NR	—	4.19E-04	2.200	<0.01	0.09%
TIN		NR		—	4.900	0.001	NR	—	0.001	4.282	<0.01	0.09%
METHYLENE CHLORIDE		NR	0.034	1.20E-04	NR	—	NR	—	1.20E-04	1.018	<0.01	0.06%
STRONTIUM		NR		—	23.573	0.004	NR	—	0.004	45.745	<0.01	0.04%
BIS(2-ETHYLHEXYL)PHTHALATE		NR	0.011	3.94E-05	NR	—	NR	—	3.94E-05	1.417	<0.01	0.01%
CHLOROFORM		NR	0.017	5.87E-05	NR	—	NR	—	5.87E-05	2.609	<0.01	0.01%
TOLUENE		NR	0.004	1.36E-05	NR	—	NR	—	1.36E-05	2.008	<0.01	<0.01%
CHROMIUM		NR		—	13.479	0.002	NR	—	0.002	476.065	<0.01	<0.01%
DI-n-BUTYL PHTHALATE		NR	0.019	6.70E-05	NR	—	NR	—	6.70E-05	42.527	<0.01	<0.01%
2-BUTANONE		NR	0.107	3.78E-04	NR	—	NR	—	3.78E-04	303.372	<0.01	<0.01%
TRICHLOROETHENE		NR	0.004	1.27E-05	NR	—	NR	—	1.27E-05	11.105	<0.01	<0.01%

HAZARD INDEX 0.21

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NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mule Deer in the OU6 B-Ponds Source Area at RFETS

MULE DEER OU6 B-PONDS		EXPOSURE POINT							SUMMARY				
		Vegetation			Surficial Soil		Surface Water						
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	HQ	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU6	IR = 0.022 SUF = 0.025			IR = 0.001 SUF = 0.025		IR = 0.044 SUF = 0.169						
SELENIUM		2.818		0.002	ND	—	0.002	5.87E-06	0.002	0.054	0.03	0.03	15.75%
ALUMINUM		172.535		0.095	18700.000	0.468	0.264	0.001	0.563	21.331	0.03	0.03	14.51%
CADMIUM		2.034		0.001	ND	—	0.001	2.86E-06	0.001	0.048	0.02	0.02	12.82%
MAGNESIUM	X	1669.753		0.918	3790.000	0.095	15.504	0.045	1.058	46.422	0.02	0.02	12.53%
MERCURY	X	0.086		4.73E-05	ND	—	2.75E-04	7.99E-07	0.000	0.002	0.02	0.02	11.02%
BARIUM	X	53.768		0.030	194.000	0.005	0.051	1.50E-04	0.035	2.154	0.02	0.02	8.82%
ARSENIC	X	2.700		0.001	5.100	1.28E-04	0.002	6.54E-06	0.002	0.120	0.01	0.01	7.43%
COPPER	X	29.452		0.016	17.000	4.25E-04	ND	—	0.017	2.880	0.01	0.01	3.17%
VANADIUM	X	1.200		0.001	38.900	0.001	0.003	8.29E-06	0.002	0.399	4.12E-03	<0.01	2.26%
TIN		25.800		0.014	ND	—	0.006	1.84E-05	0.014	4.282	3.32E-03	<0.01	1.82%
ANTIMONY	X	ND		—	ND	—	0.009	2.47E-05	2.47E-05	0.009	2.65E-03	<0.01	1.46%
MANGANESE	X	53.948		0.030	321.000	0.008	0.098	2.85E-04	0.038	15.306	2.48E-03	<0.01	1.36%
COBALT	X	3.300		0.002	9.000	2.25E-04	0.002	4.59E-06	0.002	0.856	2.39E-03	<0.01	1.31%
ZINC	X	116.031		0.064	64.100	0.002	0.026	7.57E-05	0.065	27.830	2.35E-03	<0.01	1.29%
LITHIUM		6.600		0.004	5.900	1.48E-04	0.017	5.03E-05	0.004	1.633	2.34E-03	<0.01	1.29%
LEAD	X	1.274		0.001	37.200	0.001	0.005	1.49E-05	0.002	1.391	1.18E-03	<0.01	0.65%
NICKEL	X	13.890		0.008	14.600	3.65E-04	0.004	1.03E-05	0.008	6.957	1.15E-03	<0.01	0.63%
MOLYBDENUM	X	3.800		0.002	ND	—	0.007	2.14E-05	0.002	2.200	9.60E-04	<0.01	0.53%
STRONTIUM	X	66.453		0.037	25.500	0.001	0.255	0.001	0.038	45.745	8.29E-04	<0.01	0.46%
SILVER	X	4.700		0.003	ND	—	ND	—	0.003	3.806	6.79E-04	<0.01	0.37%
AROCLOR-1254	X	0.010		5.61E-06	ND	—	NR	—	5.61E-06	0.009	6.02E-04	<0.01	0.33%
BERYLLIUM		ND		—	0.970	2.43E-05	1.79E-04	5.20E-07	2.48E-05	0.115	2.16E-04	<0.01	0.12%
THALLIUM		ND		—	0.230	5.75E-06	ND	—	5.75E-06	0.114	5.03E-05	<0.01	0.03%
ACETONE	X	NR	ND	—	NR	—	0.011	3.07E-05	3.07E-05	1.739	1.76E-05	<0.01	<0.01%
TETRACHLOROETHENE	X	NR	ND	—	NR	—	0.004	1.06E-05	1.06E-05	1.058	1.00E-05	<0.01	<0.01%
CHROMIUM	X	5.293		0.003	19.900	4.98E-04	0.002	6.42E-06	0.003	476.065	7.17E-06	<0.01	<0.01%
TOLUENE	X	NR	0.020	1.13E-05	NR	—	ND	—	1.13E-05	2.008	5.61E-06	<0.01	<0.01%
CHLOROFORM	X	NR	ND	—	NR	—	0.002	5.81E-06	5.81E-06	2.609	2.23E-06	<0.01	<0.01%
1,2-DICHLOROETHENE	X	NR	ND	—	NR	—	0.003	7.34E-06	7.34E-06	3.417	2.15E-06	<0.01	<0.01%
TRICHLOROETHENE	X	NR	ND	—	NR	—	0.003	8.35E-06	8.35E-06	11.105	7.52E-07	<0.01	<0.01%
1,2-DICHLOROETHANE	X	NR	ND	—	NR	—	0.001	2.90E-06	2.90E-06	4.068	7.14E-07	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	NR	—	ND	—	0.001	2.90E-06	2.90E-06	42.527	6.83E-08	<0.01	<0.01%

HAZARD INDEX 0.18 ***0.18***

Notes:

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Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

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Summary of Ecotoxicological Risk to Mule Dee. .. the OU4 Downgradient Source Area at RFETS

MULE DEER OU4 DOWNGRADIENT		EXPOSURE POINT							SUMMARY			
		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC In OU4	IR = 0.022 SUF = 0.023			IR = 0.001 SUF = 0.023		IR = 0.004 SUF = 0.031					
SELENIUM		3.643		0.002	ND	—	NR	—	0.002	0.054	0.03	20.38%
MAGNESIUM		2057.159		1.041	2871.518	0.066	NR	—	1.107	46.422	0.02	14.31%
ALUMINUM		413.229		0.209	12856.399	0.296	NR	—	0.505	21.331	0.02	14.21%
MERCURY	X	0.075		3.80E-05	0.107	2.45E-06	NR	—	4.04E-05	0.002	0.02	10.11%
CADMIUM	X	1.400		0.001	1.109	2.55E-05	NR	—	0.001	0.048	0.02	9.16%
BARIUM		56.333		0.029	165.692	0.004	NR	—	0.032	2.154	0.02	9.00%
LITHIUM		33.600		0.017	9.207	2.12E-04	NR	—	0.017	1.633	0.01	6.33%
VANADIUM		3.100		0.002	35.665	0.001	NR	—	0.002	0.399	0.01	3.60%
ARSENIC		1.100		0.001	4.565	1.05E-04	NR	—	0.001	0.120	0.01	3.32%
COPPER		25.140		0.013	16.143	3.71E-04	NR	—	0.013	2.880	<0.01	2.73%
BERYLLIUM	X	0.500		2.53E-04	ND	—	NR	—	2.53E-04	0.115	<0.01	1.33%
MANGANESE		51.289		0.026	337.070	0.008	NR	—	0.034	15.306	<0.01	1.32%
MOLYBDENUM		7.200		0.004	ND	—	NR	—	0.004	2.200	<0.01	0.99%
TIN		8.500		0.004	38.477	0.001	NR	—	0.005	4.282	<0.01	0.73%
LEAD		1.745		0.001	20.053	4.61E-04	NR	—	0.001	1.391	<0.01	0.58%
STRONTIUM		78.059		0.039	52.509	0.001	NR	—	0.041	45.745	<0.01	0.53%
ZINC		42.863		0.022	74.594	0.002	NR	—	0.023	27.830	<0.01	0.50%
NICKEL		6.800		0.003	14.767	3.40E-04	NR	—	0.004	6.957	<0.01	0.33%
ACETONE		NR	1.085	0.001	NR	—	NR	—	0.001	1.739	<0.01	0.19%
COBALT		ND		—	8.238	1.89E-04	NR	—	1.89E-04	0.856	<0.01	0.13%
THALLIUM		ND		—	0.630	1.45E-05	NR	—	1.45E-05	0.114	<0.01	0.08%
BENZO(a)PYRENE	X	NR	NR	—	0.200	4.60E-06	NR	—	4.60E-06	0.077	<0.01	0.04%
TOLUENE		NR	0.232	1.18E-04	NR	—	NR	—	1.18E-04	2.008	<0.01	0.04%
NITRATE/NITRITE	X	NR		—	3.975	9.14E-05	NR	—	9.14E-05	2.251	<0.01	0.02%
METHYLENE CHLORIDE		NR	0.078	3.94E-05	NR	—	NR	—	3.94E-05	1.018	<0.01	0.02%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	NR	—	0.978	2.25E-05	NR	—	2.25E-05	1.417	<0.01	0.01%
DIBENZO(a,h)ANTHRACENE		NR	NR	—	0.047	1.08E-06	NR	—	1.08E-06	0.077	<0.01	0.01%
BENZO(b)FLUORANTHENE	X	NR	NR	—	0.182	4.17E-06	NR	—	4.17E-06	0.773	<0.01	<0.01%
BENZO(a)ANTHRACENE	X	NR	NR	—	0.160	3.68E-06	NR	—	3.68E-06	0.773	<0.01	<0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	NR	—	0.150	3.45E-06	NR	—	3.45E-06	0.773	<0.01	<0.01%
BENZO(k)FLUORANTHENE	X	NR	NR	—	0.130	2.99E-06	NR	—	2.99E-06	0.773	<0.01	<0.01%
CHROMIUM		1.400		0.001	14.049	3.23E-04	NR	—	0.001	476.065	<0.01	<0.01%
TETRACHLOROETHENE		NR	0.002	8.80E-07	NR	—	NR	—	8.80E-07	1.058	<0.01	<0.01%
PYRENE	X	NR	NR	—	0.191	4.39E-06	NR	—	4.39E-06	5.669	<0.01	<0.01%
BUTYL BENZYL PHTHALATE		NR	NR	—	0.170	3.91E-06	NR	—	3.91E-06	6.061	<0.01	<0.01%
CHRYSENE	X	NR	NR	—	0.220	5.06E-06	NR	—	5.06E-06	7.728	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	NR	—	0.170	3.91E-06	NR	—	3.91E-06	7.728	<0.01	<0.01%

Summary of Ecotoxicological Risk to Mule Deer ... the OU4 Downgradient Source Area at RFETS

MULE DEER OU4 DOWNGRADIENT		EXPOSURE POINT							SUMMARY			
		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC In OU4	IR = 0.022 SUF = 0.023			IR = 0.001 SUF = 0.023		IR = 0.004 SUF = 0.031					
FLUORANTHENE	X	NR	NR	—	0.183	4.21E-06	NR	—	4.21E-06	9.449	<0.01	<0.01%
DI-n-OCTYL PHTHALATE		NR	NR	—	0.295	6.78E-06	NR	—	6.78E-06	79.055	<0.01	<0.01%
DI-n-BUTYL PHTHALATE	X	NR	NR	—	0.079	1.82E-06	NR	—	1.82E-06	42.527	<0.01	<0.01%
PHENANTHRENE	X	NR	NR	—	0.074	1.70E-06	NR	—	1.70E-06	77.285	<0.01	<0.01%

HAZARD INDEX 0.17

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NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mule Deer in the OU6 North Spray Field Source Area at RFETS

MULE DEER OU6 NORTH SPRAY FIELD		EXPOSURE POINT							SUMMARY			
		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU6	IR = 0.022 SUF = 0.016			IR = 0.001 SUF = 0.016		IR = I SUF = I					
MAGNESIUM	X	4253.480		1.497	2397.398	0.038	NR	—	1.536	46.422	0.03	29.60%
ANTIMONY	X	ND		—	16.765	2.68E-04	NR	—	2.68E-04	0.009	0.03	25.78%
BARIUM	X	83.888		0.030	170.910	0.003	NR	—	0.032	2.154	0.01	13.40%
ALUMINUM		347.535		0.122	11820.163	0.189	NR	—	0.311	21.331	0.01	13.07%
CADMIUM		1.400		4.93E-04	0.990	1.58E-05	NR	—	0.001	0.048	0.01	9.46%
VANADIUM	X	1.300		4.58E-04	33.599	0.001	NR	—	0.001	0.399	<0.01	2.23%
THALLIUM		0.450		1.58E-04	0.340	5.44E-06	NR	—	1.64E-04	0.114	<0.01	1.28%
MANGANESE	X	35.254		0.012	315.526	0.005	NR	—	0.017	15.306	<0.01	1.02%
LEAD	X	1.764		0.001	40.050	0.001	NR	—	0.001	1.391	<0.01	0.81%
ARSENIC	X	ND		—	6.579	1.05E-04	NR	—	1.05E-04	0.120	<0.01	0.79%
COPPER	X	6.541		0.002	13.985	2.24E-04	NR	—	0.003	2.880	<0.01	0.78%
STRONTIUM	X	76.343		0.027	31.283	0.001	NR	—	0.027	45.745	<0.01	0.54%
MERCURY	X	ND		—	0.066	1.06E-06	NR	—	1.06E-06	0.002	<0.01	0.40%
ZINC	X	21.241		0.007	48.942	0.001	NR	—	0.008	27.830	<0.01	0.27%
COBALT	X	ND		—	9.750	1.56E-04	NR	—	1.56E-04	0.856	<0.01	0.16%
SELENIUM		ND		—	0.574	9.19E-06	NR	—	9.19E-06	0.054	<0.01	0.15%
NICKEL	X	1.700		0.001	15.387	2.46E-04	NR	—	0.001	6.957	<0.01	0.11%
BERYLLIUM		ND		—	0.686	1.10E-05	NR	—	1.10E-05	0.115	<0.01	0.09%
LITHIUM		ND		—	6.643	1.06E-04	NR	—	1.06E-04	1.633	<0.01	0.06%
NITRATE/NITRITE		NR		—	1.000	1.60E-05	NR	—	1.60E-05	2.251	<0.01	0.01%
TOLUENE	X	NR	0.003	1.20E-06	NR	—	NR	—	1.20E-06	2.008	<0.01	<0.01%
CHROMIUM	X	ND		—	13.137	2.10E-04	NR	—	2.10E-04	476.065	<0.01	<0.01%

HAZARD INDEX 0.11

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
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IR = Ingestion Rate
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I = Incomplete pathway
NR = Not reported/analyzed in sample information
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NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mule Deer in the OU5 C-Ponds Source Area at RFETS

MULE DEER OU5 C-PONDS		EXPOSURE POINT							SUMMARY				
		Vegetation			Surficial Soil		Surface Water						
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	HQ	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU5	IR = 0.022 SUF = 0.039			IR = 0.001 SUF = 0.039		IR = 0.044 SUF = 0.198						
CADMIUM		1.500		0.001	ND	—	0.003	7.52E-06	0.001	0.048	0.03	0.03	35.51%
ALUMINUM		NR		—	13000.000	0.507	2.432	0.007	0.514	21.331	0.02	0.02	31.79%
ANTIMONY	X	NR		—	ND	—	0.015	4.47E-05	4.47E-05	0.009	4.80E-03	<0.01	6.33%
VANADIUM		NR		—	34.700	0.001	0.012	3.36E-05	0.001	0.399	3.48E-03	<0.01	4.59%
MAGNESIUM		NR		—	2860.000	0.112	10.768	0.031	0.143	46.422	3.08E-03	<0.01	4.06%
COPPER	X	8.926		0.008	10.200	3.98E-04	0.008	2.32E-05	0.008	2.880	2.81E-03	<0.01	3.70%
BARIUM	X	NR		—	144.000	0.006	0.109	3.17E-04	0.006	2.154	2.75E-03	<0.01	3.63%
LEAD	X	1.355		0.001	26.100	0.001	0.006	1.83E-05	0.002	1.391	1.58E-03	<0.01	2.09%
ZINC	X	41.397		0.036	56.700	0.002	0.048	1.41E-04	0.038	27.830	1.36E-03	<0.01	1.80%
ARSENIC		NR		—	3.500	1.37E-04	0.002	6.46E-06	1.43E-04	0.120	1.19E-03	<0.01	1.57%
MANGANESE		NR		—	360.000	0.014	0.120	3.49E-04	0.014	15.306	9.40E-04	<0.01	1.24%
NITRATE/NITRITE		NR		—	NR	—	0.541	0.002	0.002	2.251	6.97E-04	<0.01	0.92%
SELENIUM		ND		—	0.510	1.99E-05	0.002	5.38E-06	2.53E-05	0.054	4.65E-04	<0.01	0.61%
COBALT	X	NR		—	7.900	3.08E-04	0.008	2.31E-05	3.31E-04	0.856	3.87E-04	<0.01	0.51%
TIN		NR		—	32.700	0.001	0.021	6.22E-05	0.001	4.282	3.12E-04	<0.01	0.41%
LITHIUM	X	NR		—	10.700	4.17E-04	0.020	5.81E-05	4.75E-04	1.633	2.91E-04	<0.01	0.38%
MERCURY	X	ND		—	ND	—	1.41E-04	4.09E-07	4.09E-07	0.002	1.71E-04	<0.01	0.23%
ACETONE		NR	0.266	2.29E-04	NR	—	0.014	4.20E-05	2.71E-04	1.739	1.56E-04	<0.01	0.21%
NICKEL		NR		—	13.800	0.001	0.009	2.52E-05	0.001	6.957	8.10E-05	<0.01	0.11%
THALLIUM		NR		—	ND	—	0.002	6.78E-06	6.78E-06	0.114	5.93E-05	<0.01	0.08%
STRONTIUM	X	NR		—	41.700	0.002	0.337	0.001	0.003	45.745	5.69E-05	<0.01	0.08%
METHYLENE CHLORIDE	X	NR	0.027	2.36E-05	NR	—	0.004	1.06E-05	3.42E-05	1.018	3.36E-05	<0.01	0.04%
BERYLLIUM		NR		—	ND	—	0.001	2.90E-06	2.90E-06	0.115	2.53E-05	<0.01	0.03%
MOLYBDENUM		NR		—	ND	—	0.017	4.82E-05	4.82E-05	2.200	2.19E-05	<0.01	0.03%
CHROMIUM		10.957		0.009	14.800	0.001	0.005	1.38E-05	0.010	476.065	2.10E-05	<0.01	0.03%
TOLUENE	X	NR	0.020	1.75E-05	NR	—	0.001	2.90E-06	2.04E-05	2.008	1.02E-05	<0.01	0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	ND	—	ND	—	0.002	5.81E-06	5.81E-06	1.417	4.10E-06	<0.01	<0.01%
CHLOROFORM		NR	ND	—	NR	—	0.003	7.46E-06	7.46E-06	2.609	2.86E-06	<0.01	<0.01%
SILVER	X	ND		—	ND	—	0.004	1.05E-05	1.05E-05	3.806	2.75E-06	<0.01	<0.01%
PYRENE	X	NR	ND	—	0.094	3.67E-06	ND	—	3.67E-06	5.669	6.47E-07	<0.01	<0.01%
FLUORANTHENE	X	NR	ND	—	0.078	3.04E-06	ND	—	3.04E-06	9.449	3.22E-07	<0.01	<0.01%
2-BUTANONE		NR	ND	—	NR	—	0.006	1.69E-05	1.69E-05	303.372	5.55E-08	<0.01	<0.01%
										HAZARD INDEX	0.08	0.08	

Notes:

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NO LOG K_{ow} = No octonol-water partition coefficient available. LOG K_{ow}s are used to estimate vegetation uptake of organic compounds by [illegible]mparing the relative affinities of a compound for water and octonal (a lipid analo[illegible]
Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

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Summary of Ecotoxicological Risk to Mule Deer in ... OU7 Downgradient Areas Source Area at RFETS

MULE DEER OU7 DOWNGRADIENT AREAS		EXPOSURE POINT							SUMMARY			
		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Estimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU7	IR = 0.022 SUF = 0.010			IR = 0.001 SUF = 0.010		IR = I SUF = I					
SELENIUM	X	4.398		0.001	NR	—	0.007	—	0.001	0.054	0.02	31.83%
MAGNESIUM	X	2549.843		0.561	NR	—	25.696	—	0.561	46.422	0.01	21.58%
CADMIUM		1.600		3.52E-04	NR	—	0.002	—	3.52E-04	0.048	0.01	13.07%
BARIUM	X	52.799		0.012	NR	—	0.189	—	0.012	2.154	0.01	9.63%
COPPER	X	42.778		0.009	NR	—	0.009	—	0.009	2.880	<0.01	5.84%
ALUMINUM	X	212.406		0.047	NR	—	0.403	—	0.047	21.331	<0.01	3.91%
BERYLLIUM	X	1.100		2.42E-04	NR	—	ND	—	2.42E-04	0.115	<0.01	3.77%
LITHIUM	X	10.900		0.002	NR	—	0.020	—	0.002	1.633	<0.01	2.62%
ARSENIC	X	0.700		1.54E-04	NR	—	0.003	—	1.54E-04	0.120	<0.01	2.30%
VANADIUM	X	1.300		2.86E-04	NR	—	0.007	—	2.86E-04	0.399	<0.01	1.28%
NICKEL	X	14.300		0.003	NR	—	0.010	—	0.003	6.957	<0.01	0.81%
STRONTIUM	X	91.649		0.020	NR	—	0.774	—	0.020	45.745	<0.01	0.79%
MOLYBDENUM	X	3.500		0.001	NR	—	0.004	—	0.001	2.200	<0.01	0.63%
MANGANESE	X	18.571		0.004	NR	—	0.084	—	0.004	15.306	<0.01	0.48%
ZINC	X	32.779		0.007	NR	—	0.055	—	0.007	27.830	<0.01	0.46%
LEAD	X	1.532		3.37E-04	NR	—	0.009	—	3.37E-04	1.391	<0.01	0.43%
TIN	X	3.200		0.001	NR	—	0.030	—	0.001	4.282	<0.01	0.29%
TOLUENE	X	NR	0.862	1.90E-04	NR	—	0.008	—	1.90E-04	2.008	<0.01	0.17%
NITRATE/NITRITE	X	NR		—	10.779	1.08E-04	1.056	—	1.08E-04	2.251	<0.01	0.09%
4-METHYL-2-PENTANONE		NR	0.131	2.87E-05	NR	—	ND	—	2.87E-05	4.348	<0.01	0.01%
CHROMIUM	X	7.413		0.002	NR	—	ND	—	0.002	476.065	<0.01	0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	0.014	3.15E-06	NR	—	0.002	—	3.15E-06	1.417	<0.01	<0.01%
TOTAL XYLENES		NR	0.001	2.40E-07	NR	—	0.004	—	2.40E-07	0.159	<0.01	<0.01%
BUTYL BENZYL PHTHALATE		NR	0.020	4.29E-06	NR	—	ND	—	4.29E-06	6.061	<0.01	<0.01%
BENZO(a)ANTHRACENE	X	NR	0.001	1.60E-07	NR	—	ND	—	1.60E-07	0.773	<0.01	<0.01%
PYRENE	X	NR	0.005	1.07E-06	NR	—	ND	—	1.07E-06	5.669	<0.01	<0.01%
FLUORANTHENE	X	NR	0.004	9.00E-07	NR	—	ND	—	9.00E-07	9.449	<0.01	<0.01%
CHRYSENE	X	NR	0.001	2.10E-07	NR	—	ND	—	2.10E-07	7.728	<0.01	<0.01%
PHENANTHRENE	X	NR	0.009	2.08E-06	NR	—	ND	—	2.08E-06	77.285	<0.01	<0.01%
1,1,1-TRICHLOROETHANE		NR	0.003	6.40E-07	NR	—	ND	—	6.40E-07	81.354	<0.01	<0.01%

HAZARD INDEX 0.06

Notes:

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I = Incomplete pathway
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Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mule Deer in the OU6 Burial Trenches Source Area at RFETS

MULE DEER OU6 BURIAL TRENCHES		EXPOSURE POINT							SUMMARY			
		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU6	IR = 0.022 SUF = 0.004			IR = NR SUF = 0.004		IR = I SUF = I					
SELENIUM		2.580		2.27E-04	NR	—	NR	—	2.27E-04	0.054	<0.01	24.23%
MAGNESIUM	X	1586.864		0.140	NR	—	NR	—	0.140	46.422	<0.01	17.43%
CADMIUM		1.300		1.14E-04	NR	—	NR	—	1.14E-04	0.048	<0.01	13.78%
MERCURY	X	0.058		5.10E-06	NR	—	NR	—	5.10E-06	0.002	<0.01	12.31%
BARIUM	X	48.775		0.004	NR	—	NR	—	0.004	2.154	<0.01	11.54%
ALUMINUM		296.486		0.026	NR	—	NR	—	0.026	21.331	<0.01	7.09%
COPPER	X	19.589		0.002	NR	—	NR	—	0.002	2.880	<0.01	3.47%
ARSENIC	X	0.630		5.54E-05	NR	—	NR	—	5.54E-05	0.120	<0.01	2.68%
VANADIUM	X	1.400		1.23E-04	NR	—	NR	—	1.23E-04	0.399	<0.01	1.79%
LITHIUM		2.500		2.20E-04	NR	—	NR	—	2.20E-04	1.633	<0.01	0.78%
NICKEL	X	10.500		0.001	NR	—	NR	—	0.001	6.957	<0.01	0.77%
MANGANESE	X	21.320		0.002	NR	—	NR	—	0.002	15.306	<0.01	0.71%
BERYLLIUM		0.130		1.14E-05	NR	—	NR	—	1.14E-05	0.115	<0.01	0.58%
STRONTIUM	X	50.056		0.004	NR	—	NR	—	0.004	45.745	<0.01	0.56%
ZINC	X	26.858		0.002	NR	—	NR	—	0.002	27.830	<0.01	0.49%
MOLYBDENUM	X	2.100		1.85E-04	NR	—	NR	—	1.85E-04	2.200	<0.01	0.49%
LEAD	X	1.183		1.04E-04	NR	—	NR	—	1.04E-04	1.391	<0.01	0.43%
TIN		2.900		2.55E-04	NR	—	NR	—	2.55E-04	4.282	<0.01	0.35%
ACETONE	X	NR	1.066	9.38E-05	NR	—	NR	—	9.38E-05	1.739	<0.01	0.31%
METHYLENE CHLORIDE	X	NR	0.371	3.26E-05	NR	—	NR	—	3.26E-05	1.018	<0.01	0.19%
TOLUENE	X	NR	0.089	7.82E-06	NR	—	NR	—	7.82E-06	2.008	<0.01	0.02%
2-BUTANONE	X	NR	2.157	1.90E-04	NR	—	NR	—	1.90E-04	303.372	<0.01	<0.01%
4-METHYL-2-PENTANONE	X	NR	0.018	1.60E-06	NR	—	NR	—	1.60E-06	4.348	<0.01	<0.01%
CHROMIUM	X	1.600		1.41E-04	NR	—	NR	—	1.41E-04	476.065	<0.01	<0.01%
TRICHLOROETHENE	X	NR	0.028	2.47E-06	NR	—	NR	—	2.47E-06	11.105	<0.01	<0.01%
CHLOROFORM	X	NR	0.006	5.40E-07	NR	—	NR	—	5.40E-07	2.609	<0.01	<0.01%
BENZENE	X	NR	0.002	2.00E-07	NR	—	NR	—	2.00E-07	2.038	<0.01	<0.01%

HAZARD INDEX 0.02

Notes:

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Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mule Deer in the OU2 Mound Area Source Area at RFETS

MULE DEER OU2 MOUND AREA		EXPOSURE POINT							SUMMARY			
		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU2	IR = 0.022 SUF = 0.008			IR = 0.001 SUF = 0.008		IR = 1 SUF = 1					
ALUMINUM		NR		—	10100.000	0.081	NR	—	0.081	21.331	<0.01	53.37%
AROCLOR-1254	X	NR	ND	—	0.970	7.76E-06	NR	—	7.76E-06	0.009	<0.01	11.74%
VANADIUM		NR		—	31.100	2.49E-04	NR	—	2.49E-04	0.399	<0.01	8.79%
MAGNESIUM		NR		—	2730.000	0.022	NR	—	0.022	46.422	<0.01	6.63%
BARIUM		NR		—	108.000	0.001	NR	—	0.001	2.154	<0.01	5.65%
ARSENIC		NR		—	5.900	4.72E-05	NR	—	4.72E-05	0.120	<0.01	5.55%
MANGANESE		NR		—	240.000	0.002	NR	—	0.002	15.306	<0.01	1.77%
ACETONE		NR	0.989	1.74E-04	NR	—	NR	—	1.74E-04	1.739	<0.01	1.41%
LEAD	X	NR		—	16.000	1.28E-04	NR	—	1.28E-04	1.391	<0.01	1.30%
COBALT		NR		—	6.200	4.96E-05	NR	—	4.96E-05	0.856	<0.01	0.82%
LITHIUM		NR		—	8.800	7.04E-05	NR	—	7.04E-05	1.633	<0.01	0.61%
COPPER		NR		—	13.100	1.05E-04	NR	—	1.05E-04	2.880	<0.01	0.51%
THALLIUM		NR		—	0.500	4.00E-06	NR	—	4.00E-06	0.114	<0.01	0.49%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	0.166	2.93E-05	0.052	4.20E-07	NR	—	2.97E-05	1.417	<0.01	0.30%
ZINC		NR		—	46.300	3.70E-04	NR	—	3.70E-04	27.830	<0.01	0.19%
NICKEL		NR		—	11.400	9.12E-05	NR	—	9.12E-05	6.957	<0.01	0.18%
STRONTIUM		NR		—	66.300	0.001	NR	—	0.001	45.745	<0.01	0.16%
METHYLENE CHLORIDE		NR	0.062	1.10E-05	NR	—	NR	—	1.10E-05	1.018	<0.01	0.15%
BENZO(a)PYRENE	X	NR	ND	—	0.096	7.70E-07	NR	—	7.70E-07	0.077	<0.01	0.14%
AROCLOR-1260	X	NR	ND	—	0.660	5.28E-06	NR	—	5.28E-06	1.182	<0.01	0.06%
TOLUENE		NR	0.042	7.38E-06	NR	—	NR	—	7.38E-06	2.008	<0.01	0.05%
TETRACHLOROETHENE		NR	0.011	1.90E-06	NR	—	NR	—	1.90E-06	1.058	<0.01	0.03%
CHLOROFORM		NR	0.020	3.59E-06	NR	—	NR	—	3.59E-06	2.609	<0.01	0.02%
BENZO(b)FLUORANTHENE	X	NR	ND	—	0.120	9.60E-07	NR	—	9.60E-07	0.773	<0.01	0.02%
4-METHYL-2-PENTANONE		NR	0.027	4.79E-06	NR	—	NR	—	4.79E-06	4.348	<0.01	0.02%
BENZO(a)ANTHRACENE	X	NR	ND	—	0.086	6.90E-07	NR	—	6.90E-07	0.773	<0.01	0.01%
BENZENE		NR	0.007	1.22E-06	NR	—	NR	—	1.22E-06	2.038	<0.01	0.01%
INDENO(1,2,3-cd)PYRENE	X	NR	ND	—	0.045	3.60E-07	NR	—	3.60E-07	0.773	<0.01	0.01%
FLUORANTHENE	X	NR	0.004	7.20E-07	0.200	1.60E-06	NR	—	2.32E-06	9.449	<0.01	<0.01%
PYRENE	X	NR	ND	—	0.180	1.44E-06	NR	—	1.44E-06	5.669	<0.01	<0.01%
CHROMIUM	X	NR		—	10.200	8.16E-05	NR	—	8.16E-05	476.065	<0.01	<0.01%
TRICHLOROETHENE		NR	0.010	1.76E-06	NR	—	NR	—	1.76E-06	11.105	<0.01	<0.01%
2-BUTANONE		NR	0.186	3.27E-05	NR	—	NR	—	3.27E-05	303.372	<0.01	<0.01%
CHRYSENE	X	NR	ND	—	0.100	8.00E-07	NR	—	8.00E-07	7.728	<0.01	<0.01%

Summary of Ecotoxicological Risk to Mule Deer in the OU2 Mound Area Source Area at RFETS

MULE DEER OU2 MOUND AREA		EXPOSURE POINT							SUMMARY			
		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU2	IR = 0.022 SUF = 0.008			IR = 0.001 SUF = 0.008		IR = I SUF = I					
DI-n-BUTYL PHTHALATE	X	NR	0.015	2.65E-06	ND	—	NR	—	2.65E-06	42.527	<0.01	<0.01%
BENZO(ghi)PERYLENE	X	NR	ND	—	0.045	3.60E-07	NR	—	3.60E-07	7.728	<0.01	<0.01%
PHENANTHRENE	X	NR	ND	—	0.083	6.60E-07	NR	—	6.60E-07	77.285	<0.01	<0.01%

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Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Mule Deer in the OU5 Surface Disturbance Source Area at RFETS

MULE DEER OU5 SURFACE DISTURBANCE		EXPOSURE POINT							SUMMARY			
		Vegetation			Surficial Soil		Surface Water					
		Exp. Point Conc.	Extimated Value	Intake	Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC in OU5	IR = NR SUF = 0.006			IR = 0.001 SUF = 0.006		IR = I SUF = I					
ALUMINUM		NR		—	7680.000	0.046	NR	—	0.046	21.331	<0.01	42.42%
MERCURY	X	NR		—	0.660	3.96E-06	NR	—	3.96E-06	0.002	<0.01	32.40%
VANADIUM		NR		—	22.200	1.33E-04	NR	—	1.33E-04	0.399	<0.01	6.56%
MAGNESIUM		NR		—	1810.000	0.011	NR	—	0.011	46.422	<0.01	4.59%
BARIUM	X	NR		—	80.800	4.85E-04	NR	—	4.85E-04	2.154	<0.01	4.42%
ARSENIC		NR		—	3.900	2.34E-05	NR	—	2.34E-05	0.120	<0.01	3.84%
MANGANESE		NR		—	218.000	0.001	NR	—	0.001	15.306	<0.01	1.68%
LEAD	X	NR		—	14.100	8.46E-05	NR	—	8.46E-05	1.391	<0.01	1.19%
COBALT	X	NR		—	5.700	3.42E-05	NR	—	3.42E-05	0.856	<0.01	0.78%
BERYLLIUM		NR		—	0.600	3.60E-06	NR	—	3.60E-06	0.115	<0.01	0.62%
COPPER	X	NR		—	14.200	8.52E-05	NR	—	8.52E-05	2.880	<0.01	0.58%
LITHIUM	X	NR		—	6.500	3.90E-05	NR	—	3.90E-05	1.633	<0.01	0.47%
NICKEL		NR		—	10.100	6.06E-05	NR	—	6.06E-05	6.957	<0.01	0.17%
ZINC	X	NR		—	40.000	2.40E-04	NR	—	2.40E-04	27.830	<0.01	0.17%
STRONTIUM	X	NR		—	38.600	2.32E-04	NR	—	2.32E-04	45.745	<0.01	0.10%
CHROMIUM		NR		—	7.800	4.68E-05	NR	—	4.68E-05	476.065	<0.01	<0.01%

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OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

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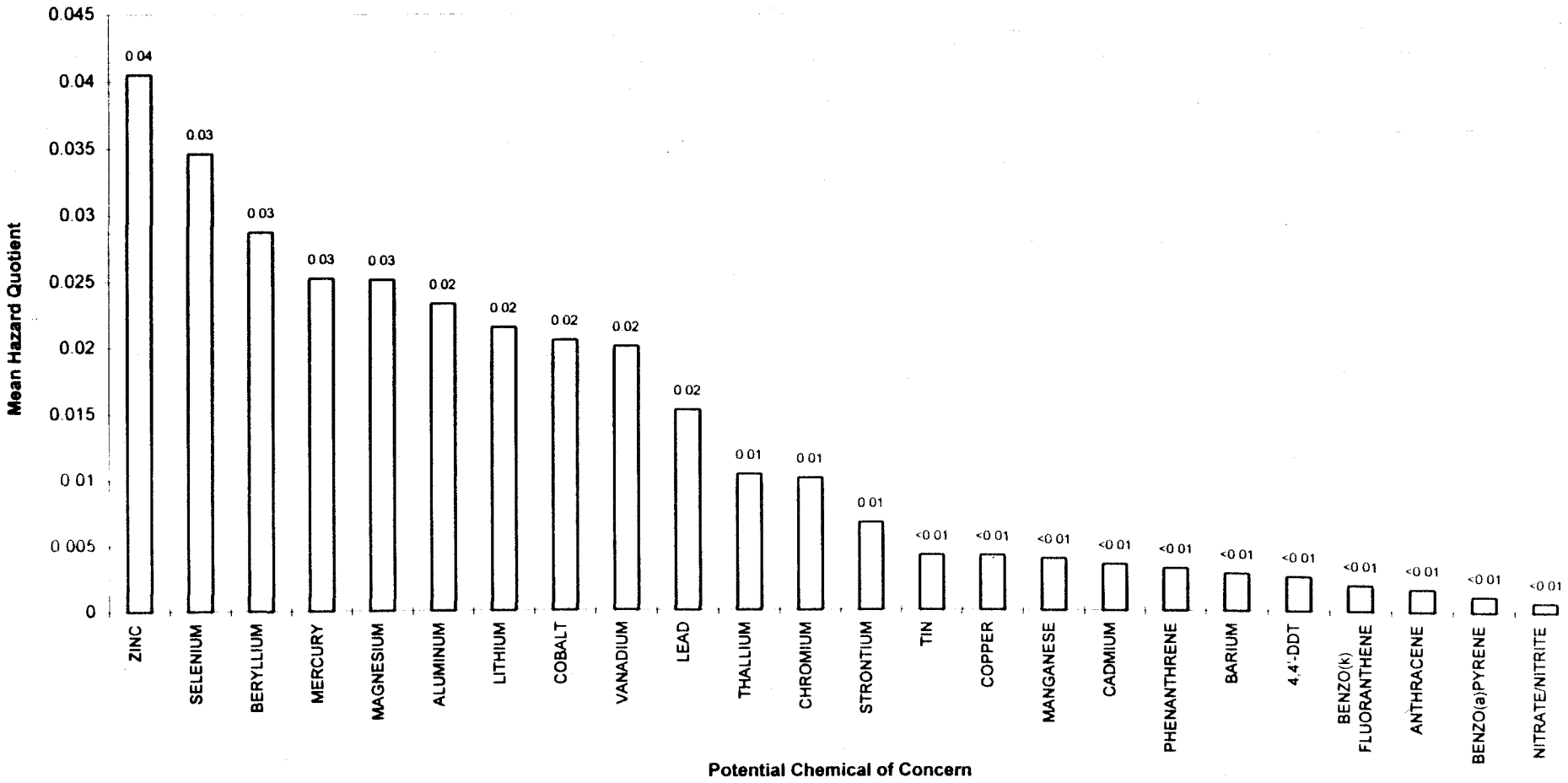
Summary of Ecotoxicological Risk to Red-tailed Hawks

Summary of Sitewide Ecotoxicological Risk to Red-tailed Hawks at RFETS

Mean Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



Note: Variation in similar values is due to rounding

Summary of Sitewide Ecotoxicological Risk to Red-tailed Hawks at RFETS

RED-TAILED HAWK

Analyte	OU1 881 Hillside	OU5 Ash Pits	OU5 C Ponds	OU5 Old Landfill	OU2 903 Pad	OU5 Surface Disturbance	OU2 East Trenches	OU4 Downgradient	OU6 A Ponds	OU6 B Ponds	OU2 Mound Area	OU6 North Spray Field	OU11 West Spray Field	OU6 Burial Trenches	OU7 Downgradient Areas	OU6 Soil Dump Areas	Mean Hazard Quotient	Hazard Quotient Range	Percent of Total Risk
ZINC	0.05	0.02	0.06	0.03	0.06	3.31E-05	0.17	0.01	0.12	0.07	3.84E-05	9.46E-05	8.77E-04	0.02	0.03	0.02	0.04	<0.001 - 0.171	12.83%
SELENIUM	0.03	9.08E-05	0.04	7.36E-05	0.03	—	0.07	—	—	0.17	—	3.07E-05	2.76E-04	1.95E-03	0.03	—	0.03	<0.001 - 0.175	10.96%
BERYLLIUM	0.02	0.01	—	0.01	0.03	9.47E-04	0.02	0.05	0.01	0.01	—	2.53E-03	0.03	—	—	0.15	0.03	0.001 - 0.154	9.09%
MERCURY	8.33E-04	1.03E-03	—	1.18E-03	1.15E-03	9.01E-04	—	0.06	—	0.05	—	2.11E-04	—	—	0.02	0.13	0.03	<0.001 - 0.127	8.00%
MAGNESIUM	4.35E-03	0.03	2.14E-03	0.03	0.01	2.03E-04	0.01	0.02	0.12	0.10	3.06E-04	6.28E-04	4.64E-03	0.01	0.02	0.05	0.03	<0.001 - 0.124	7.96%
ALUMINUM	0.02	0.04	0.01	0.03	0.03	1.18E-03	0.04	0.02	0.04	0.06	1.55E-03	4.22E-03	0.04	3.60E-03	4.16E-03	0.03	0.02	0.001 - 0.056	7.38%
LITHIUM	0.03	0.02	0.02	0.01	0.05	1.58E-03	0.07	0.01	0.01	0.01	2.14E-03	3.77E-03	0.06	—	—	0.02	0.02	0.002 - 0.066	6.81%
COBALT	0.03	0.03	0.02	0.02	0.03	1.81E-03	0.05	0.01	0.02	0.01	1.97E-03	0.01	0.05	—	—	0.02	0.02	0.002 - 0.051	6.51%
VANADIUM	0.01	0.01	0.01	0.01	0.02	6.77E-04	0.02	3.62E-03	0.06	0.13	9.48E-04	2.39E-03	0.02	0.01	0.02	0.01	0.02	0.001 - 0.127	6.35%
LEAD	0.01	0.01	0.01	0.01	0.01	6.88E-05	0.03	3.26E-04	0.09	0.05	7.80E-05	4.56E-04	0.01	2.67E-03	0.01	4.84E-03	0.02	<0.001 - 0.086	4.83%
THALLIUM	0.02	0.02	—	0.01	0.02	—	—	0.01	—	3.20E-03	1.61E-03	2.55E-03	0.02	—	—	0.01	0.01	0.002 - 0.021	3.28%
CHROMIUM	3.37E-03	1.31E-03	0.01	7.79E-04	0.02	6.64E-05	2.25E-03	3.98E-04	0.07	0.04	8.68E-05	2.61E-04	2.71E-03	4.50E-03	0.01	1.24E-03	0.01	<0.001 - 0.065	3.18%
STRONTIUM	9.27E-04	0.01	3.69E-04	0.01	7.99E-04	5.12E-05	9.40E-04	4.42E-03	0.03	0.03	8.80E-05	9.68E-05	7.40E-04	3.00E-03	0.01	0.01	0.01	<0.001 - 0.031	2.11%
TIN	5.55E-04	1.83E-04	2.48E-04	7.73E-05	5.31E-04	—	7.91E-04	8.76E-04	0.03	0.02	—	—	1.32E-04	1.31E-03	2.61E-03	2.31E-03	<0.01	<0.001 - 0.026	1.33%
COPPER	0.02	3.86E-03	2.59E-03	4.18E-03	0.01	7.91E-06	0.01	1.70E-03	0.01	0.01	7.30E-06	1.82E-05	1.72E-04	1.25E-03	2.57E-03	1.64E-03	<0.01	<0.001 - 0.015	1.32%
MANGANESE	2.51E-03	4.98E-03	1.70E-03	2.71E-03	3.16E-03	1.54E-04	4.47E-03	2.16E-03	0.02	0.01	1.70E-04	5.22E-04	0.01	1.59E-03	1.99E-03	4.87E-03	<0.01	<0.001 - 0.017	1.25%
CADMIUM	0.01	7.86E-05	4.43E-03	3.71E-05	0.01	—	0.01	2.23E-05	8.84E-05	—	—	1.39E-05	1.05E-04	—	4.91E-03	1.72E-04	<0.01	<0.001 - 0.013	1.12%
PHENANTHRENE	1.54E-03	—	—	0.02	1.89E-03	—	4.49E-04	5.98E-05	—	—	2.02E-05	—	—	—	—	2.39E-03	<0.01	<0.001 - 0.018	1.03%
BARIUM	1.80E-03	4.00E-03	8.52E-04	2.76E-03	1.78E-03	7.17E-05	2.32E-03	1.49E-03	0.01	0.01	9.58E-05	3.54E-04	2.74E-03	1.21E-03	2.59E-03	4.18E-03	<0.01	<0.001 - 0.012	0.90%
4,4'-DDT	—	—	—	1.35E-03	—	—	—	—	3.90E-03	—	—	—	—	—	—	—	<0.01	0.001 - 0.004	0.83%
BENZO(k) FLUORANTHENE	8.17E-04	—	—	2.88E-03	1.06E-03	—	—	1.05E-04	—	—	—	—	—	—	—	4.98E-03	<0.01	<0.001 - 0.005	0.62%
ANTHRACENE	5.55E-04	—	—	4.77E-03	6.79E-04	—	—	—	—	—	—	—	—	—	—	8.63E-04	<0.01	0.001 - 0.005	0.54%
BENZO(a)PYRENE	8.53E-04	—	—	4.46E-03	1.09E-03	—	5.90E-04	1.61E-04	—	—	2.31E-05	—	—	—	—	1.12E-03	<0.01	<0.001 - 0.004	0.37%
NITRATE/NITRITE	2.24E-04	—	—	—	4.07E-04	—	—	1.24E-04	—	—	—	2.18E-05	3.51E-03	—	1.34E-04	6.71E-04	<0.01	<0.001 - 0.004	0.23%
ARSENIC	6.20E-04	5.62E-04	2.37E-04	4.06E-04	5.69E-04	3.97E-05	1.14E-03	1.55E-04	1.49E-04	2.25E-04	6.00E-05	1.56E-04	1.93E-03	—	—	4.73E-04	<0.01	<0.001 - 0.002	0.15%
DIBENZO(a,h)ANTHRACENE	2.52E-04	—	—	1.28E-03	3.11E-04	—	—	3.79E-05	—	—	—	—	—	—	—	2.93E-04	<0.01	<0.001 - 0.001	0.14%
DI-n-BUTYL PHTHALATE	—	—	—	2.17E-04	7.67E-04	—	—	4.09E-05	—	—	—	—	—	—	—	6.84E-04	<0.01	<0.001 - 0.001	0.14%
INDENO(1,2,3-cd)PYRENE	2.23E-04	—	—	1.74E-03	2.54E-04	—	—	4.83E-05	—	—	4.40E-06	—	—	—	—	3.01E-04	<0.01	<0.001 - 0.002	0.14%
FLUORANTHENE	2.09E-04	—	1.26E-05	1.40E-03	2.33E-04	—	1.13E-04	1.48E-05	—	—	4.84E-06	—	—	—	—	3.10E-04	<0.01	<0.001 - 0.001	0.09%
PYRENE	1.90E-04	—	1.52E-05	1.20E-03	2.18E-04	—	1.07E-04	1.54E-05	—	—	4.35E-06	—	—	—	—	3.02E-04	<0.01	<0.001 - 0.001	0.08%
MOLYBDENUM	1.64E-04	6.74E-05	—	2.32E-04	3.16E-04	—	—	—	2.66E-04	—	—	—	4.63E-04	—	—	—	<0.01	<0.001 - <0.001	0.08%
AROCLOR-1254	1.52E-04	—	—	2.08E-04	1.52E-04	—	—	—	—	—	5.05E-05	—	—	—	—	2.08E-04	<0.01	<0.001 - <0.001	0.05%
BENZO(b)FLUORANTHENE	8.62E-05	—	—	5.40E-04	1.14E-04	—	7.89E-05	1.47E-05	—	—	2.91E-06	—	—	—	—	1.94E-04	<0.01	<0.001 - 0.001	0.05%
FLUORENE	5.30E-05	—	—	4.01E-04	6.44E-05	—	—	—	—	—	—	—	—	—	—	5.24E-05	<0.01	<0.001 - <0.001	0.05%
NICKEL	4.35E-05	1.69E-05	1.18E-05	1.54E-04	4.85E-05	1.30E-06	3.04E-05	6.32E-06	1.52E-03	8.13E-06	1.46E-06	4.61E-06	2.79E-05	—	—	1.36E-05	<0.01	<0.001 - 0.002	0.04%
CHRYSENE	9.88E-05	—	—	5.06E-04	1.15E-04	—	5.41E-05	1.77E-05	—	—	2.42E-06	—	—	—	—	1.30E-04	<0.01	<0.001 - 0.001	0.04%
BENZO(a)ANTHRACENE	8.96E-05	—	—	4.82E-04	1.13E-04	—	3.05E-05	1.29E-05	—	—	2.07E-06	—	—	—	—	1.19E-04	<0.01	<0.001 - <0.001	0.04%
AROCLOR-1248	7.27E-05	—	—	—	1.54E-04	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	0.04%
BIS(2-ETHYLHEXYL)PHTHALATE	—	—	—	2.29E-05	5.43E-05	—	2.41E-05	5.08E-05	—	—	8.10E-07	—	—	—	—	3.30E-04	<0.01	<0.001 - <0.001	0.03%
HEPTACHLOR EPOXIDE	—	—	—	7.33E-05	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	0.02%
BENZO(ghi)PERYLENE	5.62E-05	—	—	1.56E-04	6.47E-05	—	—	1.37E-05	—	—	1.10E-06	—	—	—	—	6.59E-05	<0.01	<0.001 - <0.001	0.02%
DIELDRIN	—	—	—	9.89E-06	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
SILVER	—	1.40E-07	—	4.10E-07	—	—	2.00E-07	—	2.61E-05	1.90E-05	—	—	—	5.30E-07	8.66E-06	—	<0.01	<0.001 - <0.001	<0.01%
AROCLOR-1260	—	—	—	—	—	—	—	—	—	—	6.74E-06	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
ALDRIN	—	—	—	4.94E-06	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
delta-BHC	—	—	—	—	—	—	—	—	4.78E-06	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
2-METHYLNAPHTHALENE	—	—	—	1.60E-06	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
NAPHTHALENE	3.00E-07	—	—	4.23E-06	—	—	—	—	—	—	—	—	—	—	—	2.50E-07	<0.01	<0.001 - <0.001	<0.01%
ACENAPHTHENE	5.30E-07	—	—	4.46E-06	6.30E-07	—	—	—	—	—	—	—	—	—	—	5.50E-07	<0.01	<0.001 - <0.001	<0.01%
DI-n-OCTYL PHTHALATE	—	—	—	1.10E-07	—	—	—	1.90E-07	—	—	—	—	—	—	—	1.16E-06	<0.01	<0.001 - <0.001	<0.01%
BUTYL BENZYL PHTHALATE	—	—	—	1.30E-07	—	—	—	5.00E-08	—	—	—	—	—	—	—	6.00E-08	<0.01	<0.001 - <0.001	<0.01%

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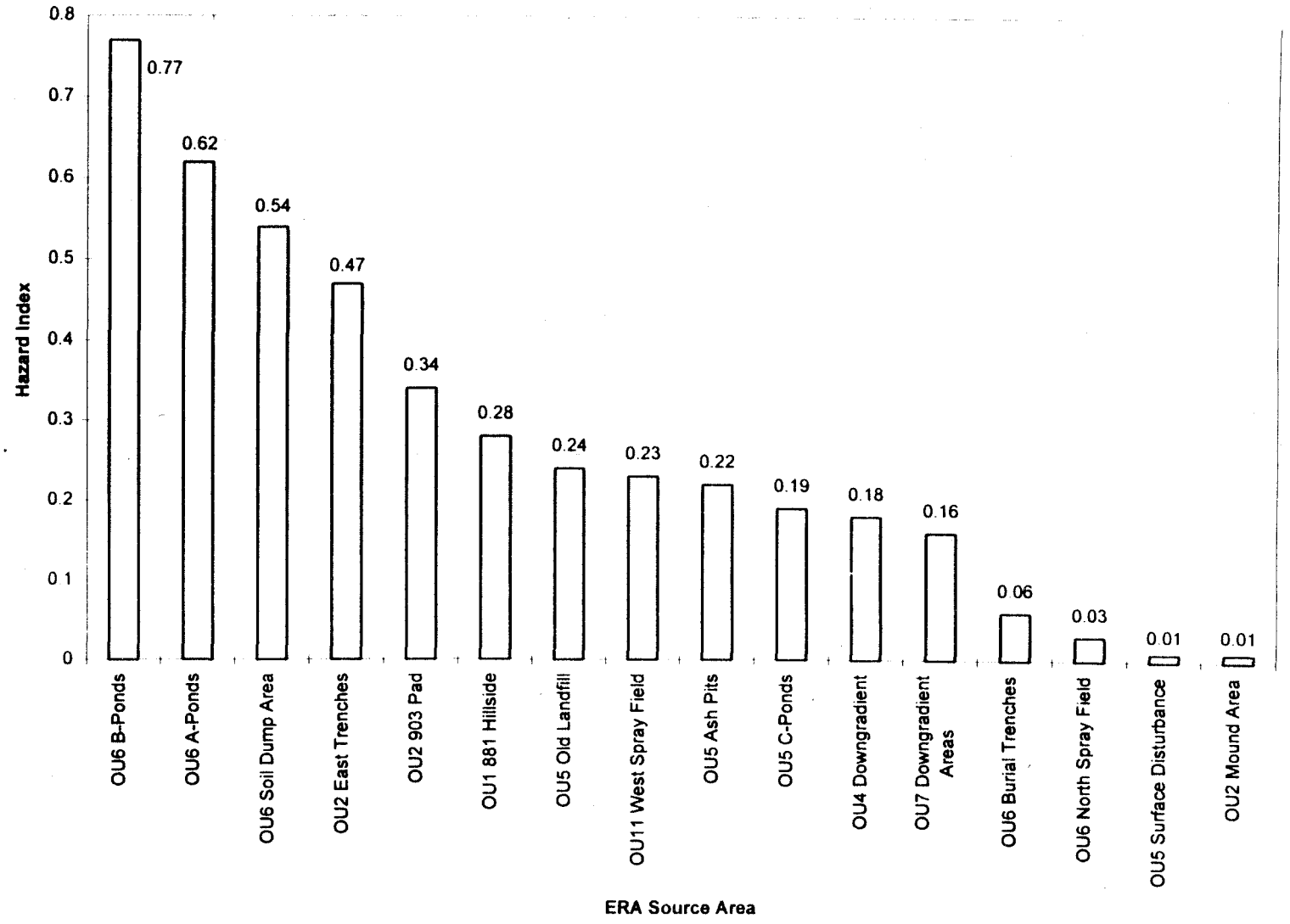
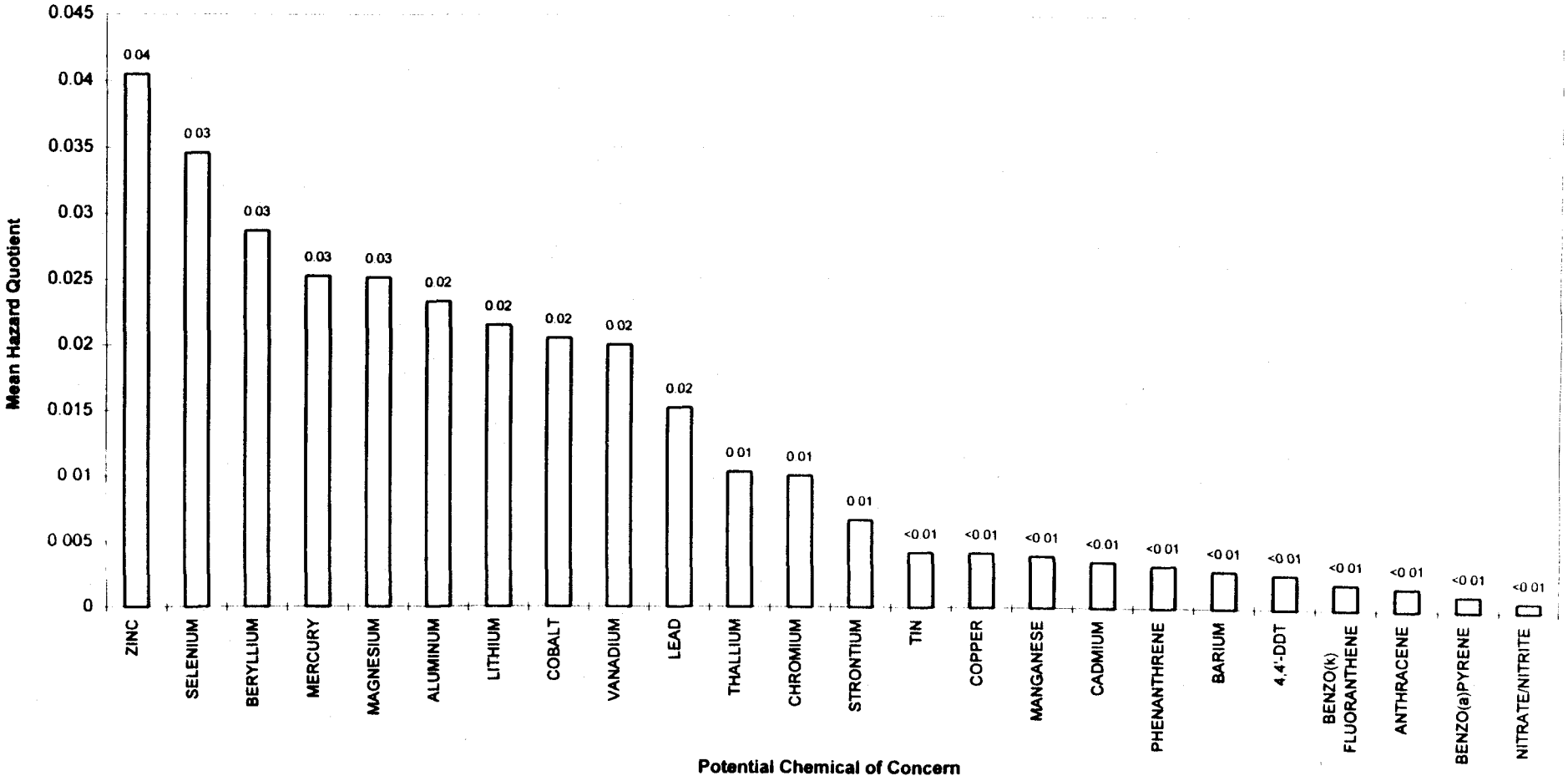
Summary of Ecotoxicological Risk to Red-tailed Hawks at RFETS



Summary of Sitewide Ecotoxicological Risk to Red-tailed Hawks at RFETS

Mean Hazard Quotients for the PCOCs Contributing ≥ 1% of Risk



Note: Variation in similar values is due to rounding

Summary of Sitewide Ecotoxicological Risk to Red-tailed Hawks at RFETS

RED-TAILED HAWK																			
Analyte	OU1 881 Hillside	OU5 Ash Pits	OU5 C Ponds	OU5 Old Landfill	OU2 903 Pad	OU5 Surface Disturbance	OU2 East Trenches	OU4 Downgradient	OU6 A Ponds	OU6 B Ponds	OU2 Mound Area	OU6 North Spray Field	OU11 West Spray Field	OU6 Burial Trenches	OU7 Downgradient Areas	OU6 Soil Dump Areas	Mean Hazard Quotient	Hazard Quotient Range	Percent of Total Risk
ZINC	0.05	0.02	0.06	0.03	0.06	3.31E-05	0.17	0.01	0.12	0.07	3.84E-05	9.46E-05	8.77E-04	0.02	0.03	0.02	0.04	<0.001 - 0.171	12.83%
SELENIUM	0.03	9.08E-05	0.04	7.36E-05	0.03	—	0.07	—	—	0.17	—	3.07E-05	2.76E-04	1.95E-03	0.03	—	0.03	<0.001 - 0.175	10.96%
BERYLLIUM	0.02	0.01	—	0.01	0.03	9.47E-04	0.02	0.05	0.01	0.01	—	2.53E-03	0.03	—	—	0.15	0.03	0.001 - 0.154	9.09%
MERCURY	8.33E-04	1.03E-03	—	1.18E-03	1.15E-03	9.01E-04	—	0.06	—	0.05	—	2.11E-04	—	—	0.02	0.13	0.03	<0.001 - 0.127	8.00%
MAGNESIUM	4.35E-03	0.03	2.14E-03	0.03	0.01	2.03E-04	0.01	0.02	0.12	0.10	3.06E-04	6.28E-04	4.64E-03	0.01	0.02	0.05	0.03	<0.001 - 0.124	7.96%
ALUMINUM	0.02	0.04	0.01	0.03	0.03	1.18E-03	0.04	0.02	0.04	0.06	1.55E-03	4.22E-03	0.04	3.60E-03	4.16E-03	0.03	0.02	0.001 - 0.056	7.38%
LITHIUM	0.03	0.02	0.02	0.01	0.05	1.58E-03	0.07	0.01	0.01	0.01	2.14E-03	3.77E-03	0.06	—	—	0.02	0.02	0.002 - 0.066	6.81%
COBALT	0.03	0.03	0.02	0.02	0.03	1.81E-03	0.05	0.01	0.02	0.01	1.97E-03	0.01	0.05	—	—	0.02	0.02	0.002 - 0.051	6.51%
VANADIUM	0.01	0.01	0.01	0.01	0.02	6.77E-04	0.02	3.62E-03	0.06	0.13	9.48E-04	2.39E-03	0.02	0.01	0.02	0.01	0.02	0.001 - 0.127	6.35%
LEAD	0.01	0.01	0.01	0.01	0.01	6.88E-05	0.03	3.26E-04	0.09	0.05	7.80E-05	4.56E-04	0.01	2.67E-03	0.01	4.84E-03	0.02	<0.001 - 0.086	4.83%
THALLIUM	0.02	0.02	—	0.01	0.02	—	—	0.01	—	3.20E-03	1.61E-03	2.55E-03	0.02	—	—	0.01	0.01	0.002 - 0.021	3.28%
CHROMIUM	3.37E-03	1.31E-03	0.01	7.79E-04	0.02	6.64E-05	2.25E-03	3.98E-04	0.07	0.04	8.68E-05	2.61E-04	2.71E-03	4.50E-03	0.01	1.24E-03	0.01	<0.001 - 0.065	3.18%
STRONTIUM	9.27E-04	0.01	3.69E-04	0.01	7.99E-04	5.12E-05	9.40E-04	4.42E-03	0.03	0.03	8.80E-05	9.68E-05	7.40E-04	3.00E-03	0.01	0.01	0.01	<0.001 - 0.031	2.11%
TIN	5.55E-04	1.83E-04	2.48E-04	7.73E-05	5.31E-04	—	7.91E-04	8.76E-04	0.03	0.02	—	—	1.32E-04	1.31E-03	2.61E-03	2.31E-03	<0.01	<0.001 - 0.026	1.33%
COPPER	0.02	3.86E-03	2.59E-03	4.18E-03	0.01	7.91E-06	0.01	1.70E-03	0.01	0.01	7.30E-06	1.82E-05	1.72E-04	1.25E-03	2.57E-03	1.64E-03	<0.01	<0.001 - 0.015	1.32%
MANGANESE	2.51E-03	4.98E-03	1.70E-03	2.71E-03	3.16E-03	1.54E-04	4.47E-03	2.16E-03	0.02	0.01	1.70E-04	5.22E-04	0.01	1.59E-03	1.99E-03	4.87E-03	<0.01	<0.001 - 0.017	1.25%
CADMIUM	0.01	7.86E-05	4.43E-03	3.71E-05	0.01	—	0.01	2.23E-05	8.84E-05	—	—	1.39E-05	1.05E-04	—	4.91E-03	1.72E-04	<0.01	<0.001 - 0.013	1.12%
PHENANTHRENE	1.54E-03	—	—	0.02	1.89E-03	—	4.49E-04	5.98E-05	—	—	2.02E-05	—	—	—	—	2.39E-03	<0.01	<0.001 - 0.016	1.03%
BARIUM	1.80E-03	4.00E-03	8.52E-04	2.76E-03	1.78E-03	7.17E-05	2.32E-03	1.49E-03	0.01	0.01	9.58E-05	3.54E-04	2.74E-03	1.21E-03	2.59E-03	4.18E-03	<0.01	<0.001 - 0.012	0.90%
4,4'-DDT	—	—	—	1.35E-03	—	—	—	—	3.90E-03	—	—	—	—	—	—	—	<0.01	0.001 - 0.004	0.83%
BENZO(k) FLUORANTHENE	8.17E-04	—	—	2.88E-03	1.06E-03	—	—	1.05E-04	—	—	—	—	—	—	—	4.98E-03	<0.01	<0.001 - 0.005	0.62%
ANTHRACENE	5.55E-04	—	—	4.77E-03	6.79E-04	—	—	—	—	—	—	—	—	—	—	8.63E-04	<0.01	0.001 - 0.005	0.54%
BENZO(a)PYRENE	8.53E-04	—	—	4.46E-03	1.09E-03	—	5.90E-04	1.61E-04	—	—	2.31E-05	—	—	—	—	1.12E-03	<0.01	<0.001 - 0.004	0.37%
NITRATE/NITRITE	2.24E-04	—	—	—	4.07E-04	—	—	1.24E-04	—	—	—	2.18E-05	3.51E-03	—	1.34E-04	6.71E-04	<0.01	<0.001 - 0.004	0.23%
ARSENIC	6.20E-04	5.62E-04	2.37E-04	4.06E-04	5.69E-04	3.97E-05	1.14E-03	1.55E-04	1.49E-04	2.25E-04	6.00E-05	1.56E-04	1.93E-03	—	—	4.73E-04	<0.01	<0.001 - 0.002	0.15%
DIBENZO(a,h)ANTHRACENE	2.52E-04	—	—	1.28E-03	3.11E-04	—	—	3.79E-05	—	—	—	—	—	—	—	2.93E-04	<0.01	<0.001 - 0.001	0.14%
DI-n-BUTYL PHTHALATE	—	—	—	2.17E-04	7.67E-04	—	—	4.09E-05	—	—	—	—	—	—	—	6.84E-04	<0.01	<0.001 - 0.001	0.14%
INDENO(1,2,3-cd)PYRENE	2.23E-04	—	—	1.74E-03	2.54E-04	—	—	4.83E-05	—	—	4.40E-06	—	—	—	—	3.01E-04	<0.01	<0.001 - 0.002	0.14%
FLUORANTHENE	2.09E-04	—	1.26E-05	1.40E-03	2.33E-04	—	1.13E-04	1.48E-05	—	—	4.84E-06	—	—	—	—	3.10E-04	<0.01	<0.001 - 0.001	0.09%
PYRENE	1.90E-04	—	1.52E-05	1.20E-03	2.18E-04	—	1.07E-04	1.54E-05	—	—	4.35E-06	—	—	—	—	3.02E-04	<0.01	<0.001 - 0.001	0.08%
MOLYBDENUM	1.64E-04	6.74E-05	—	2.32E-04	3.16E-04	—	—	—	2.66E-04	—	—	—	4.63E-04	—	—	—	<0.01	<0.001 - <0.001	0.08%
AROCLOR-1254	1.52E-04	—	—	2.08E-04	1.52E-04	—	—	—	—	—	5.05E-05	—	—	—	—	2.08E-04	<0.01	<0.001 - <0.001	0.05%
BENZO(b)FLUORANTHENE	8.62E-05	—	—	5.40E-04	1.14E-04	—	7.89E-05	1.47E-05	—	—	2.91E-06	—	—	—	—	1.94E-04	<0.01	<0.001 - 0.001	0.05%
FLUORENE	5.30E-05	—	—	4.01E-04	6.44E-05	—	—	—	—	—	—	—	—	—	—	5.24E-05	<0.01	<0.001 - <0.001	0.05%
NICKEL	4.35E-05	1.69E-05	1.18E-05	1.54E-04	4.85E-05	1.30E-06	3.04E-05	6.32E-06	1.52E-03	8.13E-06	1.46E-06	4.61E-06	2.79E-05	—	—	1.36E-05	<0.01	<0.001 - 0.002	0.04%
CHRYSENE	9.88E-05	—	—	5.06E-04	1.15E-04	—	5.41E-05	1.77E-05	—	—	2.42E-06	—	—	—	—	1.30E-04	<0.01	<0.001 - 0.001	0.04%
BENZO(a)ANTHRACENE	8.96E-05	—	—	4.82E-04	1.13E-04	—	3.05E-05	1.29E-05	—	—	2.07E-06	—	—	—	—	1.19E-04	<0.01	<0.001 - <0.001	0.04%
AROCLOR-1248	7.27E-05	—	—	—	1.54E-04	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	0.04%
BIS(2-ETHYLHEXYL)PHTHALATE	—	—	—	2.29E-05	5.43E-05	—	2.41E-05	5.08E-05	—	—	8.10E-07	—	—	—	—	3.30E-04	<0.01	<0.001 - <0.001	0.03%
HEPTACHLOR EPOXIDE	—	—	—	7.33E-05	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	0.02%
BENZO(ghi)PERYLENE	5.62E-05	—	—	1.56E-04	6.47E-05	—	—	1.37E-05	—	—	1.10E-06	—	—	—	—	6.59E-05	<0.01	<0.001 - <0.001	0.02%
DIELDRIN	—	—	—	9.89E-06	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
SILVER	—	1.40E-07	—	4.10E-07	—	—	2.00E-07	—	2.61E-05	1.90E-05	—	—	—	5.30E-07	8.66E-06	—	<0.01	<0.001 - <0.001	<0.01%
AROCLOR-1260	—	—	—	—	—	—	—	—	—	—	6.74E-06	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
ALDRIN	—	—	—	4.94E-06	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
delta-BHC	—	—	—	—	—	—	—	—	4.78E-06	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
2-METHYLNAPHTHALENE	—	—	—	1.60E-06	—	—	—	—	—	—	—	—	—	—	—	—	<0.01	<0.001 - <0.001	<0.01%
NAPHTHALENE	3.00E-07	—	—	4.23E-06	—	—	—	—	—	—	—	—	—	—	—	2.50E-07	<0.01	<0.001 - <0.001	<0.01%
ACENAPHTHENE	5.30E-07	—	—	4.46E-06	6.30E-07	—	—	—	—	—	—	—	—	—	—	5.50E-07	<0.01	<0.001 - <0.001	<0.01%
DI-n-OCTYL PHTHALATE	—	—	—	1.10E-07	—	—	—	1.90E-07	—	—	—	—	—	—	—	1.16E-06	<0.01	<0.001 - <0.001	<0.01%
BUTYL BENZYL PHTHALATE	—	—	—	1.30E-07	—	—	—	5.00E-08	—	—	—	—	—	—	—	6.00E-08	<0.01	<0.001 - <0.001	<0.01%

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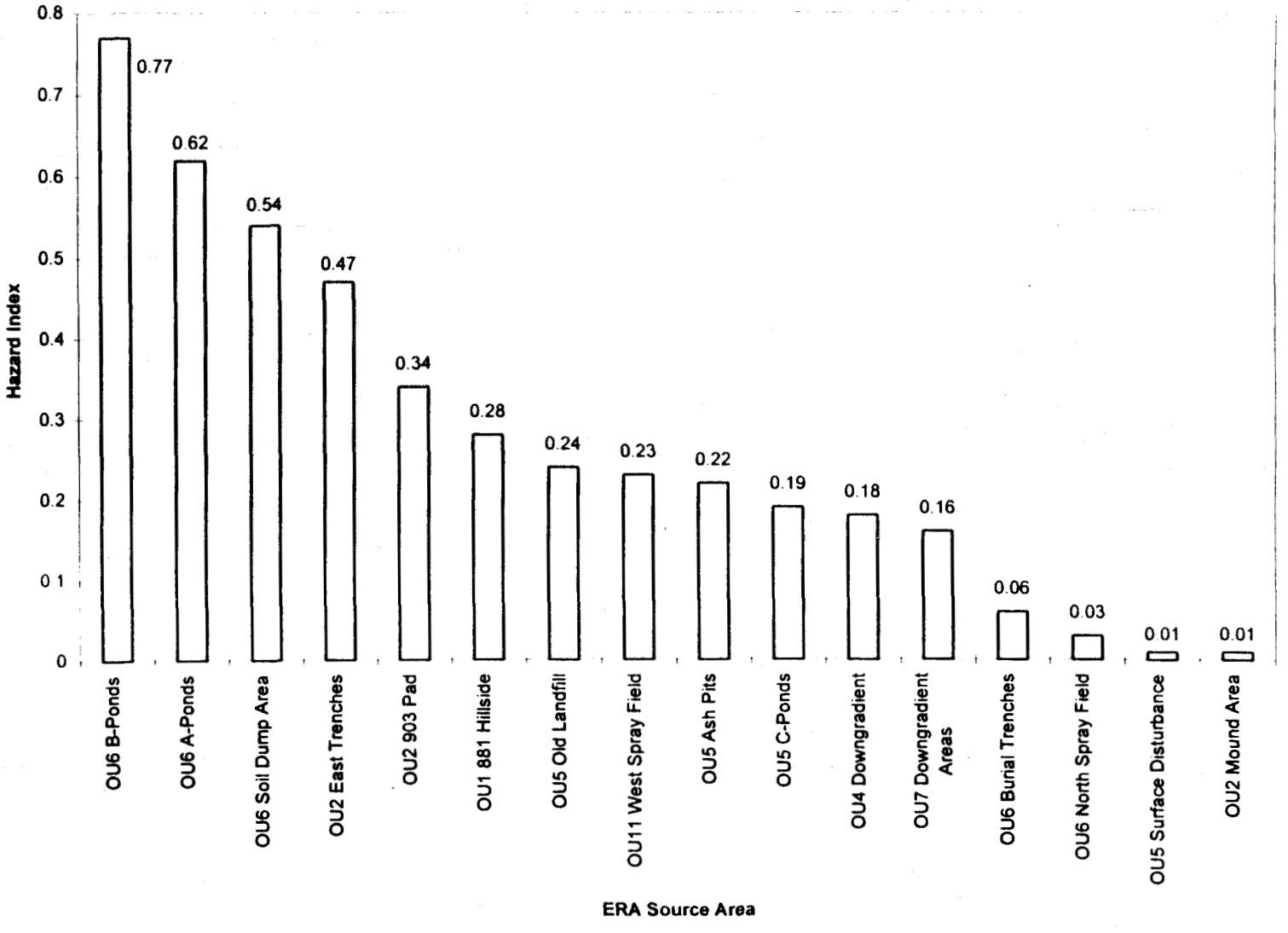
Summary of Ecotoxicological Risk to Red-tailed Hawks at RFETS



Summary of Ecotoxicological Risk to Red-tailed Hawks in the OU6 B-Ponds Source Area at RFETS

RED-TAILED HAWK OU6 B-PONDS		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU6	IR = 0.098 SUF = 0.013		IR = 0.003 SUF = 0.013					
SELENIUM		53.918	0.069	ND	—	0.069	0.393	0.18	22.92%
VANADIUM	X	28.178	0.036	38.900	0.002	0.037	0.295	0.13	16.37%
MAGNESIUM	X	5898.794	7.515	3790.000	0.148	7.663	80.217	0.10	12.47%
ZINC	X	606.869	0.773	64.100	0.002	0.776	10.863	0.07	9.32%
ALUMINUM		2019.911	2.573	18700.000	0.729	3.303	58.820	0.06	7.33%
LEAD	X	78.532	0.100	37.200	0.001	0.102	1.846	0.06	7.21%
MERCURY	X	0.235	2.99E-04	ND	—	2.99E-04	0.007	0.04	5.58%
CHROMIUM	X	32.115	0.041	19.900	0.001	0.042	1.058	0.04	5.18%
STRONTIUM	X	163.891	0.209	25.500	0.001	0.210	6.784	0.03	4.04%
TIN		117.725	0.150	ND	—	0.150	7.914	0.02	2.47%
COBALT	X	ND	—	9.000	3.51E-04	3.51E-04	0.028	0.01	1.64%
MANGANESE	X	84.595	0.108	321.000	0.013	0.120	12.701	0.01	1.23%
COPPER	X	112.560	0.143	17.000	0.001	0.144	16.147	0.01	1.16%
BARIUM	X	55.126	0.070	194.000	0.008	0.078	10.142	0.01	1.00%
BERYLLIUM		ND	—	0.970	3.78E-05	3.78E-05	0.006	0.01	0.82%
LITHIUM		ND	—	5.900	2.30E-04	2.30E-04	0.037	0.01	0.81%
THALLIUM		ND	—	0.230	8.97E-06	8.97E-06	0.003	<0.01	0.39%
ARSENIC	X	ND	—	5.100	1.99E-04	1.99E-04	0.885	<0.01	0.03%
SILVER	X	16.472	0.021	ND	—	0.021	1105.027	<0.01	<0.01%
NICKEL	X	ND	—	14.600	0.001	0.001	70.054	<0.01	<0.01%

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Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Red-tailed Hawks in the OU6 A-Ponds Source Area at RFETS

RED-TAILED HAWK OU6 A-PONDS		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU6	IR = 0.098 SUF = 0.020		IR = 0.003 SUF = 0.020					
MAGNESIUM	X	5030.433	9.860	1880.000	0.113	9.972	80.217	0.12	19.92%
ZINC	X	646.549	1.267	65.800	0.004	1.271	10.863	0.12	18.75%
LEAD	X	80.277	0.157	33.000	0.002	0.159	1.846	0.09	13.80%
CHROMIUM	X	35.026	0.069	9.000	0.001	0.069	1.058	0.07	10.45%
VANADIUM	X	7.100	0.014	51.100	0.003	0.017	0.295	0.06	9.23%
ALUMINUM		925.173	1.813	7830.000	0.470	2.283	58.820	0.04	6.22%
TIN		102.000	0.200	93.300	0.006	0.206	7.914	0.03	4.17%
STRONTIUM	X	85.892	0.168	37.100	0.002	0.171	6.784	0.03	4.04%
MANGANESE	X	77.287	0.151	1110.000	0.067	0.218	12.701	0.02	2.75%
COBALT	X	ND	ND	7.100	4.26E-04	4.26E-04	0.028	0.02	2.44%
BERYLLIUM		ND	ND	1.300	7.80E-05	7.80E-05	0.006	0.01	2.08%
COPPER	X	106.489	0.209	5.000	3.00E-04	0.209	16.147	0.01	2.07%
BARIUM	X	57.799	0.113	100.000	0.006	0.119	10.142	0.01	1.88%
LITHIUM		ND	ND	4.800	2.88E-04	2.88E-04	0.037	0.01	1.25%
4,4'-DDT		NR	NR	0.026	1.56E-06	1.56E-06	4.00E-04	<0.01	0.62%
NICKEL	X	54.095	0.106	13.100	0.001	0.107	70.054	<0.01	0.24%
MOLYBDENUM	X	ND	ND	5.300	3.18E-04	3.18E-04	1.197	<0.01	0.04%
ARSENIC	X	ND	ND	2.200	1.32E-04	1.32E-04	0.885	<0.01	0.02%
CADMIUM		ND	ND	2.200	1.32E-04	1.32E-04	1.494	<0.01	0.01%
SILVER	X	14.724	0.029	ND	ND	0.029	1105.027	<0.01	<0.01%
delta-BHC		NR	NR	0.023	1.38E-06	1.38E-06	0.289	<0.01	<0.01%

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Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Red-tailed Hawks in the OU6 Soil Dump Areas Source Area at RFETS

RED-TAILED HAWK OU6 SOIL DUMP AREAS		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU6	IR = 0.098 SUF = 0.028		IR = 0.003 SUF = 0.028					
BERYLLIUM		0.300	0.001	0.621	5.21E-05	0.001	0.006	0.17	31.03%
MERCURY	X	0.302	0.001	0.139	1.17E-05	0.001	0.007	0.14	26.60%
MAGNESIUM	X	1291.996	3.545	2354.730	0.198	3.743	80.217	0.05	8.69%
COBALT	X	ND	—	6.279	0.001	0.001	0.028	0.04	6.65%
ALUMINUM		451.741	1.240	9659.033	0.811	2.051	58.820	0.03	6.49%
LITHIUM		ND	—	9.142	0.001	0.001	0.037	0.03	5.03%
ZINC	X	85.709	0.235	94.049	0.008	0.243	10.863	0.02	4.16%
STRONTIUM	X	33.631	0.092	37.401	0.003	0.095	6.784	0.01	2.61%
THALLIUM		ND	—	0.260	2.18E-05	2.18E-05	0.003	0.01	1.36%
VANADIUM	X	ND	—	26.996	0.002	0.002	0.295	0.01	1.26%
BENZO(k)FLUORANTHENE	X	NR	—	2.200	1.85E-04	1.85E-04	0.037	<0.01	0.93%
MANGANESE	X	15.079	0.041	244.118	0.021	0.062	12.701	<0.01	0.91%
LEAD	X	2.505	0.007	24.511	0.002	0.009	1.846	<0.01	0.91%
BARIUM	X	11.861	0.033	117.141	0.010	0.042	10.142	<0.01	0.77%
PHENANTHRENE	X	NR	—	1.056	8.87E-05	8.87E-05	0.037	<0.01	0.45%
TIN		6.000	0.016	22.063	0.002	0.018	7.914	<0.01	0.42%
COPPER	X	9.200	0.025	15.408	0.001	0.027	16.147	<0.01	0.31%
BENZO(a)PYRENE	X	NR	—	0.495	4.16E-05	4.16E-05	0.037	<0.01	0.21%
NITRATE/NITRITE		NR	—	7.689	0.001	0.001	0.962	<0.01	0.19%
CHROMIUM	X	ND	—	15.651	0.001	0.001	1.058	<0.01	0.18%
ANTHRACENE	X	NR	—	0.382	3.21E-05	3.21E-05	0.037	<0.01	0.16%
DI-n-BUTYL PHTHALATE	X	NR	—	0.473	3.97E-05	3.97E-05	0.058	<0.01	0.13%
ARSENIC	X	ND	—	4.989	4.19E-04	4.19E-04	0.885	<0.01	0.09%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	2.270	1.91E-04	1.91E-04	0.577	<0.01	0.06%
FLUORANTHENE	X	NR	—	1.376	1.16E-04	1.16E-04	0.372	<0.01	0.06%
PYRENE	X	NR	—	1.337	1.12E-04	1.12E-04	0.372	<0.01	0.06%
INDENO(1,2,3-cd)PYRENE	X	NR	—	0.334	2.81E-05	2.81E-05	0.093	<0.01	0.06%
DIBENZO(a,h)ANTHRACENE	X	NR	—	0.130	1.09E-05	1.09E-05	0.037	<0.01	0.05%
AROCLOR-1254	X	NR	—	0.429	3.60E-05	3.60E-05	0.173	<0.01	0.04%
BENZO(b)FLUORANTHENE	X	NR	—	0.855	7.19E-05	7.19E-05	0.371	<0.01	0.04%
CADMIUM		ND	—	3.054	2.57E-04	2.57E-04	1.494	<0.01	0.03%
CHRYSENE	X	NR	—	0.577	4.85E-05	4.85E-05	0.372	<0.01	0.02%
BENZO(a)ANTHRACENE	X	NR	—	0.526	4.42E-05	4.42E-05	0.372	<0.01	0.02%
BENZO(ghi)PERYLENE	X	NR	—	0.292	2.45E-05	2.45E-05	0.372	<0.01	0.01%
FLUORENE	X	NR	—	0.232	1.95E-05	1.95E-05	0.371	<0.01	0.01%
NICKEL	X	ND	—	11.325	0.001	0.001	70.054	<0.01	<0.01%

Summary of Ecotoxicological Risk to Red-tailed Hawks in the OU6 Soil Dump Areas Source Area at RFETS

RED-TAILED HAWK OU6 SOIL DUMP AREAS		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU6	IR = 0.098 SUF = 0.028		IR = 0.003 SUF = 0.028					
DI-n-OCTYL PHTHALATE	X	NR	—	0.658	5.53E-05	5.53E-05	47.492	<0.01	<0.01%
ACENAPHTHENE	X	NR	—	0.244	2.05E-05	2.05E-05	37.215	<0.01	<0.01%
NAPHTHALENE	X	NR	—	0.110	9.24E-06	9.24E-06	37.215	<0.01	<0.01%
BUTYL BENZYL PHTHALATE	X	NR	—	0.072	6.05E-06	6.05E-06	108.554	<0.01	<0.01%

HAZARD INDEX 0.54

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Red-tailed Ha...s in the OU2 East Trenches Source Area at RFETS

RED-TAILED HAWK OU2 EAST TRENCHES		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU2	IR = 0.098 SUF = 0.061		IR = 0.003 SUF = 0.061					
ZINC		308.380	1.843	54.004	0.010	1.853	10.863	0.17	36.13%
SELENIUM		4.609	0.028	0.510	9.33E-05	0.028	0.393	0.07	15.09%
LITHIUM		NR	—	13.267	0.002	0.002	0.037	0.05	11.45%
COBALT		NR	—	7.136	0.001	0.001	0.028	0.04	7.56%
ALUMINUM		NR	—	12216.913	2.236	2.236	58.820	0.04	8.05%
LEAD	X	8.589	0.051	45.985	0.008	0.060	1.846	0.03	6.88%
BERYLLIUM		NR	—	0.590	1.08E-04	1.08E-04	0.006	0.02	3.81%
VANADIUM		NR	—	27.790	0.005	0.005	0.295	0.02	3.59%
CADMIUM		2.548	0.015	1.400	2.56E-04	0.015	1.494	0.01	2.13%
COPPER		17.166	0.103	13.080	0.002	0.105	16.147	0.01	1.38%
MAGNESIUM		NR	—	2431.742	0.445	0.445	80.217	0.01	1.17%
MANGANESE		NR	—	310.494	0.057	0.057	12.701	<0.01	0.95%
BARIUM		NR	—	128.840	0.024	0.024	10.142	<0.01	0.50%
CHROMIUM	X	ND	—	12.981	0.002	0.002	1.058	<0.01	0.40%
ARSENIC		NR	—	5.496	0.001	0.001	0.885	<0.01	0.24%
STRONTIUM		NR	—	34.852	0.006	0.006	6.784	<0.01	0.19%
TIN		NR	—	34.188	0.006	0.006	7.914	<0.01	0.16%
BENZO(a)PYRENE	X	NR	—	0.120	2.20E-05	2.20E-05	0.037	<0.01	0.13%
PHENANTHRENE	X	NR	—	0.091	1.67E-05	1.67E-05	0.037	<0.01	0.10%
FLUORANTHENE	X	NR	—	0.229	4.19E-05	4.19E-05	0.372	<0.01	0.02%
PYRENE	X	NR	—	0.218	4.00E-05	4.00E-05	0.372	<0.01	0.02%
BENZO(b)FLUORANTHENE	X	NR	—	0.160	2.93E-05	2.93E-05	0.371	<0.01	0.02%
CHRYSENE	X	NR	—	0.110	2.01E-05	2.01E-05	0.372	<0.01	0.01%
BENZO(a)ANTHRACENE	X	NR	—	0.062	1.14E-05	1.14E-05	0.372	<0.01	0.01%
NICKEL		NR	—	11.629	0.002	0.002	70.054	<0.01	0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	0.076	1.39E-05	1.39E-05	0.577	<0.01	0.01%
SILVER		ND	—	1.200	2.20E-04	2.20E-04	1105.027	<0.01	<0.01%

HAZARD INDEX 0.47

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available, BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available, LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Red-tailed Hawks in the OU2 903 Pad Source Area at RFETS

RED-TAILED HAWK OU2 903 PAD		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU2	IR = 0.098 SUF = 0.042		IR = 0.003 SUF = 0.042					
ZINC		154.647	0.637	72.699	0.009	0.646	10.863	0.06	17.68%
LITHIUM		NR	—	13.592	0.002	0.002	0.037	0.05	16.07%
COBALT		NR	—	7.671	0.001	0.001	0.028	0.04	10.62%
SELENIUM		3.059	0.013	0.620	7.81E-05	0.013	0.393	0.03	9.83%
BERYLLIUM		NR	—	1.200	1.51E-04	1.51E-04	0.006	0.03	7.49%
ALUMINUM		NR	—	11886.180	1.498	1.498	58.820	0.03	7.57%
CHROMIUM	X	4.600	0.019	26.789	0.003	0.022	1.058	0.02	6.18%
THALLIUM		NR	—	0.430	5.42E-05	5.42E-05	0.003	0.02	5.37%
VANADIUM		NR	—	35.681	0.004	0.004	0.295	0.01	4.03%
LEAD	X	5.567	0.023	32.367	0.004	0.027	1.846	0.01	4.35%
CADMIUM		3.448	0.014	0.920	1.16E-04	0.014	1.494	0.01	2.79%
MAGNESIUM		NR	—	3426.354	0.432	0.432	80.217	0.01	1.60%
COPPER		19.385	0.080	21.815	0.003	0.083	16.147	0.01	1.53%
MANGANESE		NR	—	318.236	0.040	0.040	12.701	<0.01	0.94%
PHENANTHRENE	X	NR	—	0.556	7.00E-05	7.00E-05	0.037	<0.01	0.56%
BARIUM		NR	—	143.681	0.018	0.018	10.142	<0.01	0.53%
MERCURY		ND	—	0.060	7.56E-06	7.56E-06	0.007	<0.01	0.32%
BENZO(a)PYRENE	X	NR	—	0.320	4.04E-05	4.04E-05	0.037	<0.01	0.32%
BENZO(k)FLUORANTHENE	X	NR	—	0.311	3.92E-05	3.92E-05	0.037	<0.01	0.31%
STRONTIUM		NR	—	43.040	0.005	0.005	6.784	<0.01	0.22%
DI-n-BUTYL PHTHALATE	X	NR	—	0.353	4.45E-05	4.45E-05	0.058	<0.01	0.23%
ANTHRACENE		NR	—	0.201	2.53E-05	2.53E-05	0.037	<0.01	0.20%
ARSENIC		NR	—	3.998	0.001	0.001	0.885	<0.01	0.34%
TIN		NR	—	33.323	0.004	0.004	7.914	<0.01	0.15%
NITRATE/NITRITE		NR	—	3.106	3.91E-04	3.91E-04	0.962	<0.01	0.12%
MOLYBDENUM		NR	—	3.000	3.78E-04	3.78E-04	1.197	<0.01	0.09%
DIBENZO(a,h)ANTHRACENE		NR	—	0.092	1.16E-05	1.16E-05	0.037	<0.01	0.09%
INDENO(1,2,3-cd)PYRENE	X	NR	—	0.188	2.37E-05	2.37E-05	0.093	<0.01	0.08%
FLUORANTHENE	X	NR	—	0.689	8.68E-05	8.68E-05	0.372	<0.01	0.07%
PYRENE	X	NR	—	0.644	8.11E-05	8.11E-05	0.372	<0.01	0.06%
AROCLOR-1248		NR	—	0.211	2.66E-05	2.66E-05	0.173	<0.01	0.05%
AROCLOR-1254	X	NR	—	0.208	2.63E-05	2.63E-05	0.173	<0.01	0.05%
CHRYSENE	X	NR	—	0.341	4.29E-05	4.29E-05	0.372	<0.01	0.03%
BENZO(b)FLUORANTHENE	X	NR	—	0.337	4.24E-05	4.24E-05	0.371	<0.01	0.03%
BENZO(a)ANTHRACENE	X	NR	—	0.334	4.21E-05	4.21E-05	0.372	<0.01	0.03%
BENZO(ghi)PERYLENE	X	NR	—	0.191	2.41E-05	2.41E-05	0.372	<0.01	0.02%
FLUORENE		NR	—	0.190	2.39E-05	2.39E-05	0.371	<0.01	0.02%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	0.248	3.13E-05	3.13E-05	0.577	<0.01	0.02%

Summary of Ecotoxicological Risk to Red-tailed Hawks in the OU2 903 Pad Source Area at RFETS

RED-TAILED HAWK OU2 903 PAD		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU2	IR = 0.098 SUF = 0.042		IR = 0.003 SUF = 0.042					
NICKEL		NR	—	26.987	0.003	0.003	70.054	<0.01	0.01%
ACENAPHTHENE		NR	—	0.186	2.35E-05	2.35E-05	37.215	<0.01	<0.01%

HAZARD INDEX 0.34

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Red-tailed Hawks in the OU1 881 Hillside Source Area at RFETS

RED-TAILED HAWK OU1 881 HILLSIDE		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU1	IR = 0.098 SUF = 0.034		IR = 0.003 SUF = 0.034					
ZINC		151.809	0.506	85.548	0.009	0.515	10.863	0.05	16.75%
COBALT		NR	—	8.343	0.001	0.001	0.028	0.04	12.62%
SELENIUM		4.092	0.014	0.511	5.21E-05	0.014	0.393	0.04	12.59%
LITHIUM		NR	—	9.473	0.001	0.001	0.037	0.03	9.55%
ALUMINUM		NR	—	14308.320	1.459	1.459	58.820	0.02	8.76%
BERYLLIUM		NR	—	1.257	1.28E-04	1.28E-04	0.006	0.02	7.55%
THALLIUM		NR	—	0.510	5.20E-05	5.20E-05	0.003	0.02	6.13%
COPPER		72.817	0.243	35.484	0.004	0.246	16.147	0.02	5.38%
VANADIUM		NR	—	41.858	0.004	0.004	0.295	0.01	4.79%
CADMIUM		5.607	0.019	0.611	6.23E-05	0.019	1.494	0.01	4.49%
LEAD		4.542	0.015	48.003	0.005	0.020	1.846	0.01	3.83%
MAGNESIUM		NR	—	3418.568	0.349	0.349	80.217	<0.01	1.54%
CHROMIUM		ND	—	34.997	0.004	0.004	1.058	<0.01	1.34%
MANGANESE		NR	—	312.554	0.032	0.032	12.701	<0.01	0.89%
BARIUM		NR	—	179.137	0.018	0.018	10.142	<0.01	0.63%
PHENANTHRENE	X	NR	—	0.559	5.70E-05	5.70E-05	0.037	<0.01	0.54%
ARSENIC		NR	—	5.377	0.001	0.001	0.885	<0.01	0.40%
STRONTIUM		NR	—	61.651	0.006	0.006	6.784	<0.01	0.31%
BENZO(a)PYRENE	X	NR	—	0.311	3.18E-05	3.18E-05	0.037	<0.01	0.30%
BENZO(k)FLUORANTHENE	X	NR	—	0.297	3.03E-05	3.03E-05	0.037	<0.01	0.29%
MERCURY		ND	—	0.054	5.49E-06	5.49E-06	0.007	<0.01	0.28%
ANTHRACENE	X	NR	—	0.202	2.06E-05	2.06E-05	0.037	<0.01	0.20%
TIN		NR	—	43.094	0.004	0.004	7.914	<0.01	0.18%
DIBENZO(a,h)ANTHRACENE	X	NR	—	0.092	9.38E-06	9.38E-06	0.037	<0.01	0.09%
NITRATE/NITRITE		NR	—	2.111	2.15E-04	2.15E-04	0.962	<0.01	0.08%
INDENO(1,2,3-cd)PYRENE	X	NR	—	0.204	2.08E-05	2.08E-05	0.093	<0.01	0.08%
FLUORANTHENE	X	NR	—	0.762	7.77E-05	7.77E-05	0.372	<0.01	0.07%
PYRENE	X	NR	—	0.693	7.07E-05	7.07E-05	0.372	<0.01	0.07%
MOLYBDENUM		NR	—	1.926	1.96E-04	1.96E-04	1.197	<0.01	0.06%
AROCLOR-1254	X	NR	—	0.257	2.63E-05	2.63E-05	0.173	<0.01	0.05%
CHRYSENE	X	NR	—	0.361	3.68E-05	3.68E-05	0.372	<0.01	0.03%
BENZO(a)ANTHRACENE	X	NR	—	0.327	3.33E-05	3.33E-05	0.372	<0.01	0.03%
BENZO(b)FLUORANTHENE	X	NR	—	0.314	3.20E-05	3.20E-05	0.371	<0.01	0.03%
AROCLOR-1248	X	NR	—	0.123	1.26E-05	1.26E-05	0.173	<0.01	0.03%
BENZO(ghi)PERYLENE	X	NR	—	0.205	2.09E-05	2.09E-05	0.372	<0.01	0.02%
FLUORENE	X	NR	—	0.193	1.97E-05	1.97E-05	0.371	<0.01	0.02%

Summary of Ecotoxicological Risk to Red-tailed Hawks in the OU1 881 Hillside Source Area at RFETS

RED-TAILED HAWK OU1 881 HILLSIDE		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU1	IR = 0.098 SUF = 0.034		IR = 0.003 SUF = 0.034					
NICKEL		NR	—	29.863	0.003	0.003	70.054	<0.01	0.02%
ACENAPHTHENE	X	NR	—	0.195	1.99E-05	1.99E-05	37.215	<0.01	<0.01%
NAPHTHALENE	X	NR	—	0.110	1.12E-05	1.12E-05	37.215	<0.01	<0.01%

HAZARD INDEX 0.28

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Red-tailed Hawks in the OU5 Old Landfill Source Area at RFETS

RED-TAILED HAWK OU5 OLD LANDFILL		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU5	IR = 0.098 SUF = 0.021		IR = 0.003 SUF = 0.021					
COBALT	X	ND	—	8.348	0.001	0.001	0.028	0.04	14.75%
PHENANTHRENE	X	NR	—	9.640	0.001	0.001	0.037	0.03	11.16%
LITHIUM	X	ND	—	8.005	0.001	0.001	0.037	0.03	11.16%
ALUMINUM		431.427	0.888	11074.656	0.698	1.586	58.820	0.03	11.14%
MAGNESIUM		967.466	1.991	2298.534	0.145	2.136	80.217	0.03	11.00%
ZINC	X	130.097	0.268	66.571	0.004	0.272	10.863	0.03	10.34%
STRONTIUM	X	29.983	0.062	30.813	0.002	0.064	6.784	0.01	3.90%
BERYLLIUM		ND	—	0.882	5.55E-05	5.55E-05	0.006	0.01	3.82%
VANADIUM		ND	—	30.425	0.002	0.002	0.295	0.01	2.80%
THALLIUM		ND	—	0.310	1.95E-05	1.95E-05	0.003	0.01	2.69%
LEAD	X	4.363	0.009	28.695	0.002	0.011	1.846	0.01	2.46%
ANTHRACENE	X	NR	—	2.816	1.77E-04	1.77E-04	0.037	<0.01	1.98%
BENZO(a)PYRENE	X	NR	—	2.636	1.66E-04	1.66E-04	0.037	<0.01	1.85%
COPPER	X	31.629	0.065	37.703	0.002	0.067	16.147	<0.01	1.71%
BENZO(k)FLUORANTHENE	X	NR	—	1.694	1.07E-04	1.07E-04	0.037	<0.01	1.19%
BARIUM	X	10.068	0.021	115.593	0.007	0.028	10.142	<0.01	1.14%
FLUORANTHENE	X	NR	—	8.267	0.001	0.001	0.372	<0.01	1.11%
MANGANESE		8.234	0.017	277.661	0.017	0.034	12.701	<0.01	1.11%
INDENO(1,2,3-cd)PYRENE	X	NR	—	2.572	1.62E-04	1.62E-04	0.093	<0.01	0.72%
4,4'-DDT	X	NR	—	0.009	5.40E-07	5.40E-07	4.00E-04	<0.01	0.56%
DIBENZO(a,h)ANTHRACENE	X	NR	—	0.758	4.78E-05	4.78E-05	0.037	<0.01	0.53%
PYRENE	X	NR	—	7.090	4.47E-04	4.47E-04	0.372	<0.01	0.50%
MERCURY	X	ND	—	0.124	7.80E-06	7.80E-06	0.007	<0.01	0.46%
CHROMIUM		ND	—	13.088	0.001	0.001	1.058	<0.01	0.39%
BENZO(b)FLUORANTHENE	X	NR	—	3.179	2.00E-04	2.00E-04	0.371	<0.01	0.22%
CHRYSENE	X	NR	—	2.987	1.88E-04	1.88E-04	0.372	<0.01	0.21%
BENZO(a)ANTHRACENE	X	NR	—	2.850	1.80E-04	1.80E-04	0.372	<0.01	0.20%
ARSENIC		ND	—	5.702	3.59E-04	3.59E-04	0.885	<0.01	0.17%
FLUORENE	X	NR	—	2.363	1.49E-04	1.49E-04	0.371	<0.01	0.17%
MOLYBDENUM		ND	—	4.400	2.77E-04	2.77E-04	1.197	<0.01	0.10%
DI-n-BUTYL PHTHALATE	X	NR	—	0.200	1.26E-05	1.26E-05	0.058	<0.01	0.09%
AROCLOR-1254	X	NR	—	0.572	3.61E-05	3.61E-05	0.173	<0.01	0.09%
NICKEL		4.800	0.010	14.939	0.001	0.011	70.054	<0.01	0.06%
BENZO(ghi)PERYLENE	X	NR	—	0.922	5.81E-05	5.81E-05	0.372	<0.01	0.06%
TIN		ND	—	9.714	0.001	0.001	7.914	<0.01	0.05%
SELENIUM		ND	—	0.459	2.89E-05	2.89E-05	0.393	<0.01	0.03%
HEPTACHLOR EPOXIDE	X	NR	—	0.004	2.70E-07	2.70E-07	0.004	<0.01	0.03%
CADMIUM		ND	—	0.880	5.55E-05	5.55E-05	1.494	<0.01	0.02%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	0.210	1.32E-05	1.32E-05	0.577	<0.01	0.01%

Summary of Ecotoxicological Risk to Red-tailed hawks in the OU5 Old Landfill Source Area at RFETS

RED-TAILED HAWK OU5 OLD LANDFILL		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU5	IR = 0.098 SUF = 0.021		IR = 0.003 SUF = 0.021					
DIELDRIN	X	NR	—	0.009	5.80E-07	5.80E-07	0.059	<0.01	<0.01%
ALDRIN	X	NR	—	0.005	2.90E-07	2.90E-07	0.059	<0.01	<0.01%
ACENAPHTHENE	X	NR	—	2.636	1.66E-04	1.66E-04	37.215	<0.01	<0.01%
NAPHTHALENE	X	NR	—	2.498	1.57E-04	1.57E-04	37.215	<0.01	<0.01%
2-METHYLNAPHTHALENE	X	NR	—	0.944	5.95E-05	5.95E-05	37.215	<0.01	<0.01%
SILVER	X	ND	—	7.180	4.52E-04	4.52E-04	1105.027	<0.01	<0.01%
BUTYL BENZYL PHTHALATE	X	NR	—	0.220	1.39E-05	1.39E-05	108.554	<0.01	<0.01%
DI-n-OCTYL PHTHALATE	X	NR	—	0.083	5.23E-06	5.23E-06	47.492	<0.01	<0.01%

HAZARD INDEX 0.24

Notes:

RFETS = Rocky Flats Environmental Technology Site
PCOC = Potential Chemical of Concern
Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Red-tailed Hawks in the OU11 West Spray Field Source Area at RFETS

RED-TAILED HAWK OU11 WEST SPRAY FIELD		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU11	IR = NR SUF = 0.071		IR = 0.003 SUF = 0.071					
LITHIUM		NR	—	10.111	0.002	0.002	0.037	0.05	23.42%
ALUMINUM		NR	—	12185.807	2.596	2.596	58.820	0.04	19.12%
COBALT		NR	—	6.719	0.001	0.001	0.028	0.04	15.47%
BERYLLIUM		NR	—	0.682	1.45E-04	1.45E-04	0.006	0.02	10.49%
VANADIUM		NR	—	30.669	0.007	0.007	0.295	0.02	10.28%
THALLIUM		NR	—	0.270	5.75E-05	5.75E-05	0.003	0.02	8.30%
MANGANESE		NR	—	332.865	0.071	0.071	12.701	0.01	2.42%
LEAD		NR	—	46.092	0.010	0.010	1.846	0.01	2.35%
MAGNESIUM		NR	—	1746.670	0.372	0.372	80.217	<0.01	2.01%
NITRATE/NITRITE		NR	—	15.866	0.003	0.003	0.962	<0.01	1.35%
CHROMIUM		NR	—	13.479	0.003	0.003	1.058	<0.01	1.23%
BARIUM		NR	—	130.524	0.028	0.028	10.142	<0.01	1.20%
ARSENIC		NR	—	8.032	0.002	0.002	0.885	<0.01	0.98%
ZINC		NR	—	44.730	0.010	0.010	10.863	<0.01	0.40%
MOLYBDENUM		NR	—	2.600	0.001	0.001	1.197	<0.01	0.36%
STRONTIUM		NR	—	23.573	0.005	0.005	6.784	<0.01	0.32%
SELENIUM		NR	—	0.509	1.08E-04	1.08E-04	0.393	<0.01	0.12%
COPPER		NR	—	13.023	0.003	0.003	16.147	<0.01	0.08%
TIN		NR	—	4.900	0.001	0.001	7.914	<0.01	0.05%
CADMIUM		NR	—	0.737	1.57E-04	1.57E-04	1.494	<0.01	0.05%
NICKEL		NR	—	9.190	0.002	0.002	70.054	<0.01	0.01%

HAZARD INDEX 0.23

Notes:

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SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Red-tailed Hawks in the OU5 Ash Pits Source Area at RFETS

RED-TAILED HAWK OU5 ASH PITS		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU5	IR = 0.098 SUF = 0.029		IR = 0.003 SUF = 0.029					
ALUMINUM		413.418	1.175	13038.844	1.134	2.309	58.820	0.04	17.57%
COBALT	X	ND	—	8.402	0.001	0.001	0.028	0.04	15.98%
MAGNESIUM		776.812	2.208	2929.961	0.255	2.463	80.217	0.03	13.74%
LITHIUM	X	ND	—	10.380	0.001	0.001	0.037	0.03	12.10%
ZINC	X	78.515	0.223	69.631	0.006	0.229	10.863	0.02	9.43%
THALLIUM		ND	—	0.520	4.52E-05	4.52E-05	0.003	0.02	6.75%
BERYLLIUM		ND	—	0.940	8.18E-05	8.18E-05	0.006	0.01	6.10%
VANADIUM		ND	—	36.213	0.003	0.003	0.295	0.01	4.55%
STRONTIUM	X	20.606	0.059	38.768	0.003	0.062	6.784	0.01	4.09%
LEAD	X	2.692	0.008	33.783	0.003	0.011	1.846	0.01	2.67%
MANGANESE		11.936	0.034	337.520	0.029	0.063	12.701	<0.01	2.22%
BARIUM	X	9.863	0.028	143.888	0.013	0.041	10.142	<0.01	1.81%
COPPER	X	21.419	0.061	16.938	0.001	0.062	16.147	<0.01	1.72%
MERCURY	X	ND	—	0.078	6.76E-06	6.76E-06	0.007	<0.01	0.43%
CHROMIUM		ND	—	15.956	0.001	0.001	1.058	<0.01	0.42%
ARSENIC		ND	—	5.715	4.97E-04	4.97E-04	0.885	<0.01	0.25%
TIN		ND	—	16.661	0.001	0.001	7.914	<0.01	0.06%
SELENIUM		ND	—	0.410	3.57E-05	3.57E-05	0.393	<0.01	0.04%
CADMIUM		ND	—	1.349	1.17E-04	1.17E-04	1.494	<0.01	0.04%
MOLYBDENUM		ND	—	0.928	8.07E-05	8.07E-05	1.197	<0.01	0.03%
NICKEL		ND	—	13.578	0.001	0.001	70.054	<0.01	0.01%
SILVER	X	ND	—	1.807	1.57E-04	1.57E-04	1105.027	<0.01	<0.01%

HAZARD INDEX 0.22

Notes:

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I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Red-tailed Hawks in the OU5 C-Ponds Source Area at RFETS

RED-TAILED HAWK OU5 C-PONDS		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU5	IR = 0.098 SUF = 0.020		IR = 0.003 SUF = 0.020					
ZINC	X	331.676	0.650	56.700	0.003	0.653	10.863	0.06	31.15%
SELENIUM		7.964	0.016	0.510	3.06E-05	0.016	0.393	0.04	21.10%
LITHIUM	X	NR	—	10.700	0.001	0.001	0.037	0.03	14.00%
COBALT	X	NR	—	7.900	4.74E-04	4.74E-04	0.028	0.02	8.77%
ALUMINUM		NR	—	13000.000	0.780	0.780	58.820	0.01	6.87%
LEAD	X	6.573	0.013	26.100	0.002	0.014	1.846	0.01	3.93%
CHROMIUM		3.400	0.007	14.800	0.001	0.008	1.058	0.01	3.92%
VANADIUM		NR	—	34.700	0.002	0.002	0.295	0.01	3.51%
CADMIUM		3.375	—	ND	—	0.007	1.494	<0.01	2.43%
COPPER	X	21.044	0.041	10.200	0.001	0.042	16.147	<0.01	1.35%
MAGNESIUM		NR	—	2860.000	0.172	0.172	80.217	<0.01	1.11%
MANGANESE		NR	—	360.000	0.022	0.022	12.701	<0.01	0.90%
BARIUM	X	NR	—	144.000	0.009	0.009	10.142	<0.01	0.46%
STRONTIUM	X	NR	—	41.700	0.003	0.003	6.784	<0.01	0.23%
TIN		NR	—	32.700	0.002	0.002	7.914	<0.01	0.13%
ARSENIC		NR	—	3.500	2.10E-04	2.10E-04	0.885	<0.01	0.12%
PYRENE	X	NR	—	0.094	5.64E-06	5.64E-06	0.372	<0.01	0.01%
NICKEL		NR	—	13.800	0.001	0.001	70.054	<0.01	0.01%
FLUORANTHENE	X	NR	—	0.078	4.68E-06	4.68E-06	0.372	<0.01	0.01%

HAZARD INDEX 0.19

Notes:

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SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Red-tailed Ha. ..s in the OU4 Downgradient Source Area at RFETS

RED-TAILED HAWK OU4 DOWNGRADIENT		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU4	IR = 0.098 SUF = 0.010		IR = 0.003 SUF = 0.010					
MERCURY	X	0.380	3.72E-04	0.107	3.20E-06	3.76E-04	0.007	0.05	29.04%
BERYLLIUM	X	0.290	2.84E-04	ND	—	2.84E-04	0.006	0.05	25.63%
MAGNESIUM		1430.000	1.401	2871.518	0.086	1.488	80.217	0.02	10.04%
ALUMINUM		614.000	0.602	12856.399	0.386	0.987	58.820	0.02	9.08%
ZINC		109.000	0.107	74.594	0.002	0.109	10.863	0.01	5.43%
COBALT		ND	—	8.238	2.47E-04	2.47E-04	0.028	0.01	4.78%
LITHIUM		ND	—	9.207	2.76E-04	2.76E-04	0.037	0.01	4.04%
THALLIUM		ND	—	0.630	1.89E-05	1.89E-05	0.003	0.01	3.41%
STRONTIUM		29.000	0.028	52.509	0.002	0.030	6.784	<0.01	2.39%
VANADIUM		ND	—	35.665	0.001	0.001	0.295	<0.01	1.83%
MANGANESE		17.700	0.017	337.070	0.010	0.027	12.701	<0.01	1.15%
COPPER		27.500	0.027	16.143	4.84E-04	0.027	16.147	<0.01	0.90%
BARIUM		10.300	0.010	165.692	0.005	0.015	10.142	<0.01	0.80%
TIN		5.900	0.006	38.477	0.001	0.007	7.914	<0.01	0.48%
LEAD		ND	—	20.053	0.001	0.001	1.846	<0.01	0.29%
CHROMIUM		ND	—	14.049	4.21E-04	4.21E-04	1.058	<0.01	0.22%
BENZO(a)PYRENE	X	NR	—	0.200	6.00E-06	6.00E-06	0.037	<0.01	0.09%
ARSENIC		ND	—	4.565	1.37E-04	1.37E-04	0.885	<0.01	0.08%
NITRATE/NITRITE	X	NR	—	3.975	1.19E-04	1.19E-04	0.962	<0.01	0.07%
BENZO(k)FLUORANTHENE	X	NR	—	0.130	3.90E-06	3.90E-06	0.037	<0.01	0.06%
PHENANTHRENE	X	NR	—	0.074	2.22E-06	2.22E-06	0.037	<0.01	0.03%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	0.978	2.93E-05	2.93E-05	0.577	<0.01	0.03%
INDENO(1,2,3-cd)PYRENE	X	NR	—	0.150	4.50E-06	4.50E-06	0.093	<0.01	0.03%
DI-n-BUTYL PHTHALATE	X	NR	—	0.079	2.37E-06	2.37E-06	0.058	<0.01	0.02%
DIBENZO(a,h)ANTHRACENE		NR	—	0.047	1.41E-06	1.41E-06	0.037	<0.01	0.02%
CADMIUM	X	ND	—	1.109	3.33E-05	3.33E-05	1.494	<0.01	0.01%
CHRYSENE	X	NR	—	0.220	6.60E-06	6.60E-06	0.372	<0.01	0.01%
PYRENE	X	NR	—	0.191	5.73E-06	5.73E-06	0.372	<0.01	0.01%
FLUORANTHENE	X	NR	—	0.183	5.49E-06	5.49E-06	0.372	<0.01	0.01%
BENZO(b)FLUORANTHENE	X	NR	—	0.182	5.45E-06	5.45E-06	0.371	<0.01	0.01%
BENZO(ghi)PERYLENE	X	NR	—	0.170	5.10E-06	5.10E-06	0.372	<0.01	0.01%
BENZO(a)ANTHRACENE	X	NR	—	0.160	4.80E-06	4.80E-06	0.372	<0.01	0.01%
NICKEL		ND	—	14.767	4.43E-04	4.43E-04	70.054	<0.01	<0.01%
DI-n-OCTYL PHTHALATE		NR	—	0.295	8.84E-06	8.84E-06	47.492	<0.01	<0.01%
BUTYL BENZYL PHTHALATE		NR	—	0.170	5.10E-06	5.10E-06	108.554	<0.01	<0.01%

HAZARD INDEX 0.18

Notes:

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NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimat vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day, units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Red-tailed Hawks in the OU7 Downgradient Areas Source Area at RFETS

RED-TAILED HAWK OU7 DOWNGRADIENT AREAS		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU7	IR = 0.098 SUF = 0.004		IR = 0.003 SUF = 0.004					
ZINC	X	746.000	0.292	NR	—	0.292	10.863	0.03	16.68%
SELENIUM	X	26.500	0.010	NR	—	0.010	0.393	0.03	15.79%
MAGNESIUM	X	4680.000	1.835	NR	—	1.835	80.217	0.02	14.19%
VANADIUM	X	14.100	0.006	NR	—	0.006	0.295	0.02	12.62%
MERCURY		0.300	1.18E-04	NR	—	1.18E-04	0.007	0.02	10.42%
LEAD	X	55.600	0.022	NR	—	0.022	1.846	0.01	7.39%
CHROMIUM	X	29.700	0.012	NR	—	0.012	1.058	0.01	7.04%
STRONTIUM	X	118.000	0.046	NR	—	0.046	6.784	0.01	4.21%
CADMIUM		18.700	0.007	NR	—	0.007	1.494	<0.01	2.91%
ALUMINUM	X	624.000	0.245	NR	—	0.245	58.820	<0.01	2.58%
TIN	X	52.700	0.021	NR	—	0.021	7.914	<0.01	1.65%
COPPER	X	106.000	0.042	NR	—	0.042	16.147	<0.01	1.61%
BARIUM	X	67.100	0.026	NR	—	0.026	10.142	<0.01	1.59%
MANGANESE	X	64.400	0.025	NR	—	0.025	12.701	<0.01	1.22%
NITRATE/NITRITE	X	NR	—	10.779	1.29E-04	1.29E-04	0.962	<0.01	0.08%
SILVER		24.400	0.010	NR	—	0.010	1105.027	<0.01	0.01%

HAZARD INDEX 0.16

Notes:

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PCOC = Potential Chemical of Concern
Exp Point Conc = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Red-tailed Hawks in the OU6 Burial Trenches Source Area at RFETS

RED-TAILED HAWK OU6 BURIAL TRENCHES		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU6	IR = 0.098 SUF = 0.002		IR = 0.003 SUF = 0.002					
ZINC	X	887.000	0.174	NR	—	0.174	10.863	0.02	25.73%
MAGNESIUM	X	5840.000	1.145	NR	—	1.145	80.217	0.01	22.93%
VANADIUM	X	14.300	0.003	NR	—	0.003	0.295	0.01	16.34%
CHROMIUM	X	24.300	0.005	NR	—	0.005	1.058	<0.01	7.59%
ALUMINUM		1080.000	0.212	NR	—	0.212	58.820	<0.01	5.79%
STRONTIUM	X	104.000	0.020	NR	—	0.020	6.784	<0.01	4.74%
LEAD	X	25.100	0.005	NR	—	0.005	1.846	<0.01	4.35%
SELENIUM		3.900	0.001	NR	—	0.001	0.393	<0.01	4.09%
MANGANESE	X	103.000	0.020	NR	—	0.020	12.701	<0.01	2.53%
TIN		52.900	0.010	NR	—	0.010	7.914	<0.01	2.03%
COPPER	X	103.000	0.020	NR	—	0.020	16.147	<0.01	1.99%
BARIUM	X	62.500	0.012	NR	—	0.012	10.142	<0.01	1.90%
SILVER	X	3.000	0.001	NR	—	0.001	1105.027	<0.01	<0.01%

HAZARD INDEX 0.06

Notes:

RFETS = Rocky Flats Environmental Technology Site
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Exp. Point Conc. = Exposure Point Concentration
TRV = Toxicity Reference Value
OU = Operable Unit
IR = Ingestion Rate
SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Red-tailed Hawks in the OU6 North Spray Field Source Area at RFETS

RED-TAILED HAWK OU6 NORTH SPRAY FIELD		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU6	IR = NR SUF = 0.007		IR = 0.003 SUF = 0.007					
COBALT	X	NR	—	9.750	2.05E-04	2.05E-04	0.028	0.01	27.57%
ALUMINUM		NR	—	11820.163	0.248	0.248	58.820	<0.01	15.90%
LITHIUM		NR	—	6.643	1.40E-04	1.40E-04	0.037	<0.01	14.21%
VANADIUM	X	NR	—	33.599	0.001	0.001	0.295	<0.01	12.78%
BERYLLIUM		NR	—	0.686	1.44E-05	1.44E-05	0.006	<0.01	9.05%
THALLIUM		NR	—	0.340	7.14E-06	7.14E-06	0.003	<0.01	8.97%
MAGNESIUM	X	NR	—	2397.398	0.050	0.050	80.217	<0.01	2.35%
MANGANESE	X	NR	—	315.526	0.007	0.007	12.701	<0.01	2.08%
LEAD	X	NR	—	40.050	0.001	0.001	1.846	<0.01	2.04%
BARIUM	X	NR	—	170.910	0.004	0.004	10.142	<0.01	1.49%
CHROMIUM	X	NR	—	13.137	2.76E-04	2.76E-04	1.058	<0.01	0.98%
MERCURY	X	NR	—	0.066	1.39E-06	1.39E-06	0.007	<0.01	0.75%
ARSENIC	X	NR	—	6.579	1.38E-04	1.38E-04	0.885	<0.01	0.59%
STRONTIUM	X	NR	—	31.283	0.001	0.001	6.784	<0.01	0.56%
ZINC	X	NR	—	48.942	0.001	0.001	10.863	<0.01	0.35%
SELENIUM		NR	—	0.574	1.21E-05	1.21E-05	0.393	<0.01	0.12%
NITRATE/NITRITE		NR	—	1.000	2.10E-05	2.10E-05	0.962	<0.01	0.08%
COPPER	X	NR	—	13.985	2.94E-04	2.94E-04	16.147	<0.01	0.07%
CADMIUM		NR	—	0.990	2.08E-05	2.08E-05	1.494	<0.01	0.05%
NICKEL	X	NR	—	15.387	3.23E-04	3.23E-04	70.054	<0.01	0.02%

HAZARD INDEX 0.03

Notes:

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SUF = Site Use Factor
I = Incomplete pathway
NR = Not reported/analyzed in sample information
ND = Not detected in laboratory samples
NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Red-tailed Hawks in the OU5 Surface Disturbance Source Area at RFETS

RED-TAILED HAWK OU5 SURFACE DISTURBANCE		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU5	IR = NR SUF = 0.003		IR = 0.003 SUF = 0.003					
COBALT	X	NR	—	5.700	5.13E-05	5.13E-05	0.028	<0.01	23.68%
LITHIUM	X	NR	—	6.500	5.85E-05	5.85E-05	0.037	<0.01	20.44%
ALUMINUM		NR	—	7680.000	0.069	0.069	58.820	<0.01	15.16%
BERYLLIUM		NR	—	0.600	5.40E-06	5.40E-06	0.006	<0.01	11.63%
MERCURY	X	NR	—	0.660	5.94E-06	5.94E-06	0.007	<0.01	10.97%
VANADIUM		NR	—	22.200	2.00E-04	2.00E-04	0.295	<0.01	8.76%
MAGNESIUM		NR	—	1810.000	0.016	0.016	80.217	<0.01	2.58%
MANGANESE		NR	—	218.000	0.002	0.002	12.701	<0.01	2.04%
BARIUM	X	NR	—	80.800	0.001	0.001	10.142	<0.01	1.27%
LEAD	X	NR	—	14.100	1.27E-04	1.27E-04	1.846	<0.01	0.89%
CHROMIUM		NR	—	7.800	7.02E-05	7.02E-05	1.058	<0.01	0.86%
STRONTIUM	X	NR	—	38.600	3.47E-04	3.47E-04	6.784	<0.01	0.66%
ARSENIC		NR	—	3.900	3.51E-05	3.51E-05	0.885	<0.01	0.51%
ZINC	X	NR	—	40.000	3.60E-04	3.60E-04	10.863	<0.01	0.43%
COPPER	X	NR	—	14.200	1.28E-04	1.28E-04	16.147	<0.01	0.10%
NICKEL		NR	—	10.100	9.09E-05	9.09E-05	70.054	<0.01	0.02%

HAZARD INDEX 0.01

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NO BCF = No bioconcentration factor available; BCFs are used to estimate tissue uptake of chemicals found in surface water and sediments
NO LOG K_{OW} = No octonol-water partition coefficient available; LOG K_{OW}s are used to estimate vegetation uptake of organic compounds by comparing the relative affinities of a compound for water and octonal (a lipid analog)
Units for ingestion rates = kg/kg/day; units for concentrations = mg/kg

Summary of Ecotoxicological Risk to Red-tailed Hawks in the OU2 Mound Area Source Area at RFETS

RED-TAILED HAWK OU2 MOUND AREA		EXPOSURE POINT				SUMMARY			
		Small Mammal		Surficial Soil					
		Exp. Point Conc.	Intake	Exp. Point Conc.	Intake	Total Intake	Toxicity Ref. Value	Hazard Quotient	Percent of Total Risk
Analyte	PCOC for OU2	IR = NR SUF = 0.003		IR = 0.003 SUF = 0.003					
LITHIUM		NR	—	8.800	7.92E-05	7.92E-05	0.037	<0.01	23.17%
COBALT		NR	—	6.200	5.58E-05	5.58E-05	0.028	<0.01	21.57%
ALUMINUM		NR	—	10100.000	0.091	0.091	58.820	<0.01	16.74%
THALLIUM		NR	—	0.500	4.50E-06	4.50E-06	0.003	<0.01	16.23%
VANADIUM		NR	—	31.100	2.80E-04	2.80E-04	0.295	<0.01	10.27%
MAGNESIUM		NR	—	2730.000	0.025	0.025	80.217	<0.01	3.37%
MANGANESE		NR	—	240.000	0.002	0.002	12.701	<0.01	1.70%
STRONTIUM		NR	—	66.300	0.001	0.001	6.784	<0.01	1.60%
BARIUM		NR	—	108.000	0.001	0.001	10.142	<0.01	1.07%
CHROMIUM	X	NR	—	10.200	9.18E-05	9.18E-05	1.058	<0.01	0.94%
LEAD	X	NR	—	16.000	1.44E-04	1.44E-04	1.846	<0.01	0.84%
ARSENIC		NR	—	5.900	5.31E-05	5.31E-05	0.885	<0.01	0.65%
AROCLOR-1254	X	NR	—	0.970	8.73E-06	8.73E-06	0.173	<0.01	0.55%
ZINC		NR	—	46.300	4.17E-04	4.17E-04	10.863	<0.01	0.42%
BENZO(a)PYRENE	X	NR	—	0.096	8.60E-07	8.60E-07	0.037	<0.01	0.25%
PHENANTHRENE	X	NR	—	0.083	7.50E-07	7.50E-07	0.037	<0.01	0.22%
COPPER		NR	—	13.100	1.18E-04	1.18E-04	16.147	<0.01	0.08%
AROCLOR-1260	X	NR	—	0.660	5.94E-06	5.94E-06	0.881	<0.01	0.07%
FLUORANTHENE	X	NR	—	0.200	1.80E-06	1.80E-06	0.372	<0.01	0.05%
INDENO(1,2,3-cd)PYRENE	X	NR	—	0.045	4.10E-07	4.10E-07	0.093	<0.01	0.05%
PYRENE	X	NR	—	0.180	1.62E-06	1.62E-06	0.372	<0.01	0.05%
BENZO(b)FLUORANTHENE	X	NR	—	0.120	1.08E-06	1.08E-06	0.371	<0.01	0.03%
CHRYSENE	X	NR	—	0.100	9.00E-07	9.00E-07	0.372	<0.01	0.03%
BENZO(a)ANTHRACENE	X	NR	—	0.086	7.70E-07	7.70E-07	0.372	<0.01	0.02%
NICKEL		NR	—	11.400	1.03E-04	1.03E-04	70.054	<0.01	0.02%
BENZO(ghi)PERYLENE	X	NR	—	0.045	4.10E-07	4.10E-07	0.372	<0.01	0.01%
BIS(2-ETHYLHEXYL)PHTHALATE	X	NR	—	0.052	4.70E-07	4.70E-07	0.577	<0.01	0.01%

HAZARD INDEX 0.01

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Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice

Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU4 Downgradient Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU4 DOWNGRADIENT		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***			
Analyte	**PCOC for OU4**	**Surficial Soil**	**Sediment**	**Surface Water**	**TRV**
1,1,1-TRICHLOROETHANE		2	2	2	
1,1-DICHLOROETHANE		2	2	2	
1,1-DICHLOROETHENE		2	2	2	
1,2,4-TRICHLOROBENZENE		1	2	2	
1,2-DICHLOROETHANE		2	2	2	
1,2-DICHLOROETHENE		2	2	2	
2-BUTANONE		2	2	2	
2-METHYLNAPHTHALENE		1	2	2	
4,4'-DDT		1	2	2	
4-METHYL-2-PENTANONE		2	2	2	
ACENAPHTHENE		1	2	2	
ACENAPHTHYLENE		1	2	2	
ALDRIN		1	2	2	
ANTHRACENE		1	2	2	
ANTIMONY		1	2	2	
AROCLOR-1248		1	2	2	
AROCLOR-1254	X	1	2	2	
AROCLOR-1260		1	2	2	
BENZENE		2	2	2	
BENZOIC ACID		1	2	2	
BENZYL ALCOHOL		1	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	2	
CHLOROFORM		2	2	2	
delta-BHC		1	2	2	
DIBENZOFURAN		1	2	2	
DIELDRIN		1	2	2	
ENDOSULFAN SULFATE		1	2	2	
ENDRIN KETONE		1	2	2	
FLUORENE		1	2	2	
gamma-BHC (LINDANE)		1	2	2	
HEPTACHLOR		1	2	2	
HEPTACHLOR EPOXIDE		1	2	2	
ISOPHORONE		1	2	2	
METHOXYCHLOR		1	2	2	
NAPHTHALENE		1	2	2	
PENTACHLOROPHENOL		1	2	2	
PHENOL		1	2	2	
SILVER	X	1	2	2	
TOTAL XYLENES		2	2	2	
TRICHLOROETHENE		2	2	2	
VINYL ACETATE		2	2	2	

Reason Codes:

1 = Analyte not detected in medium
2 = Analyte not reported/analyzed in medium
3 = Analyte detected in medium but not included in screen for other reasons
4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU6 B-Ponds Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU6 B-PONDS		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***			
Analyte	**PCOC for OU6**	**Surficial Soil**	**Sediment**	**Surface Water**	**TRV**
1,1,1-TRICHLOROETHANE		2	1	1	
1,1-DICHLOROETHANE		2	1	1	
1,1-DICHLOROETHENE		2	1	1	
4,4'-DDT		1	1	2	
4-METHYL-2-PENTANONE	X	2	1	1	
ACENAPHTHYLENE		1	1	1	
ALDRIN	X	1	1	2	
BENZENE	X	2	1	1	
BENZOIC ACID	X	3	1	1	4
BENZYL ALCOHOL	X	1	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
delta-BHC		1	1	2	
DIBENZOFURAN	X	1	3	1	4
DIELDRIN		1	1	2	
ENDOSULFAN SULFATE		1	1	2	
ENDRIN KETONE		1	1	2	
HEPTACHLOR EPOXIDE		1	1	2	
ISOPHORONE		1	1	1	
METHOXYCHLOR		1	1	2	
NITRATE/NITRITE		2	2	2	
PENTACHLOROPHENOL		1	1	1	
TOTAL XYLENES		2	1	1	
VINYL ACETATE		2	1	1	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU6 Soil Dump Areas Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU6 SOIL DUMP AREAS		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***			
Analyte	**PCOC for OU6**	**Surficial Soil**	**Sediment**	**Surface Water**	**TRV**
1,1,1-TRICHLOROETHANE		2	2	2	
1,1-DICHLOROETHANE		2	2	2	
1,1-DICHLOROETHENE		2	2	2	
1,2,4-TRICHLOROBENZENE	X	1	2	2	
1,2-DICHLOROETHANE	X	2	2	2	
1,2-DICHLOROETHENE	X	2	2	2	
2-METHYLNAPHTHALENE	X	1	2	2	
4,4'-DDT		1	2	2	
ACENAPHTHYLENE		1	2	2	
ALDRIN	X	1	2	2	
ANTIMONY	X	1	2	2	
AROCLOR-1248		1	2	2	
AROCLOR-1260	X	1	2	2	
BENZOIC ACID	X	1	2	2	
BENZYL ALCOHOL	X	1	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	2	
CHLOROFORM	X	2	2	2	
delta-BHC		1	2	2	
DIBENZOFURAN	X	3	2	2	4
DIELDRIN		1	2	2	
ENDOSULFAN SULFATE		1	2	2	
ENDRIN KETONE		1	2	2	
gamma-BHC (LINDANE)	X	1	2	2	
HEPTACHLOR	X	1	2	2	
HEPTACHLOR EPOXIDE		1	2	2	
ISOPHORONE		1	2	2	
METHOXYCHLOR		1	2	2	
SILVER	X	1	2	2	
TRICHLOROETHENE	X	2	2	2	
VINYL ACETATE		2	2	2	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU6 A-Ponds Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU6 A-PONDS		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***			
Analyte	**PCOC for OU6**	**Surficial Soil**	**Sediment**	**Surface Water**	**TRV**
1,1,1-TRICHLOROETHANE		2	1	1	
1,1-DICHLOROETHANE		2	1	1	
1,1-DICHLOROETHENE		2	1	1	
1,2,4-TRICHLOROBENZENE	X	1	1	1	
1,2-DICHLOROETHANE	X	2	1	1	
1,2-DICHLOROETHENE	X	2	1	1	
2-METHYLNAPHTHALENE	X	1	1	1	
ACENAPHTHYLENE		1	1	1	
AROCLOR-1248		1	1	2	
AROCLOR-1260	X	1	1	2	
BENZOIC ACID	X	3	3	1	4
BENZYL ALCOHOL	X	1	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
BUTYL BENZYL PHTHALATE	X	1	1	1	
CHLOROFORM	X	2	1	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	1	
DIBENZOFURAN	X	1	1	1	
DIELDRIN		1	1	2	
ENDOSULFAN SULFATE		1	1	2	
ENDRIN KETONE		1	1	2	
FLUORENE	X	1	1	1	
gamma-BHC (LINDANE)	X	1	1	2	
HEPTACHLOR	X	1	1	2	
HEPTACHLOR EPOXIDE		1	1	2	
ISOPHORONE		1	1	1	
METHOXYCHLOR		1	1	2	
NAPHTHALENE	X	1	1	1	
NITRATE/NITRITE		2	2	2	
PENTACHLOROPHENOL		1	1	1	
TETRACHLOROETHENE	X	2	1	1	
TOTAL XYLENES		2	1	1	
TRICHLOROETHENE	X	2	1	1	
VINYL ACETATE		2	1	1	

Reason Codes:

1 = Analyte not detected in medium
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Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU5 Old Landfill Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU5 OLD LANDFILL		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***			
Analyte	**PCOC for OU5**	**Surficial Soil**	**Sediment**	**Surface Water**	**TRV**
1,1-DICHLOROETHANE		1	1	1	
1,1-DICHLOROETHENE		1	1	1	
1,2,4-TRICHLOROBENZENE		1	1	1	
1,2-DICHLOROETHANE		1	1	1	
1,2-DICHLOROETHENE		1	1	1	
ACENAPHTHYLENE	X	3	1	1	4
AROCLOR-1248		1	1	1	
BENZENE		1	1	1	
BENZOIC ACID	X	3	1	1	4
BENZYL ALCOHOL		1	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
delta-BHC		1	1	1	
DIBENZOFURAN	X	3	1	1	4
gamma-BHC (LINDANE)		1	1	1	
HEPTACHLOR		1	1	1	
VINYL ACETATE		1	1	1	

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Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU2 East Trenches Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU2 EAST TRENCHES		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***			
Analyte	**PCOC for OU2**	**Surficial Soil**	**Sediment**	**Surface Water**	**TRV**
1,1-DICHLOROETHANE		2	2	2	
1,2,4-TRICHLOROBENZENE		1	2	2	
1,2-DICHLOROETHANE		2	2	2	
ACENAPHTHYLENE		1	2	2	
ALDRIN		1	2	2	
ANTIMONY		1	2	2	
AROCLOR-1248		1	2	2	
AROCLOR-1260	X	1	2	2	
BENZO(k)FLUORANTHENE	X	1	2	2	
BENZOIC ACID	X	3	2	2	4
BENZYL ALCOHOL		1	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	2	
BUTYL BENZYL PHTHALATE		1	2	2	
delta-BHC	X	1	2	2	
DI-n-OCTYL PHTHALATE		1	2	2	
DIBENZO(a,h)ANTHRACENE		1	2	2	
DIBENZOFURAN		1	2	2	
DIELDRIN		1	2	2	
ENDOSULFAN SULFATE		1	2	2	
ENDRIN KETONE		1	2	2	
gamma-BHC (LINDANE)		1	2	2	
HEPTACHLOR		1	2	2	
HEPTACHLOR EPOXIDE		1	2	2	
ISOPHORONE		1	2	2	
MERCURY		1	2	2	
METHOXYCHLOR		1	2	2	
MOLYBDENUM		1	2	2	
NITRATE/NITRITE		2	2	2	
PENTACHLOROPHENOL		1	2	2	
PHENOL		1	2	2	
THALLIUM		1	2	2	
VINYL ACETATE		2	2	2	

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Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU7 Downgradient Areas Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU7 DOWNGRADIENT AREAS		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***			
Analyte	**PCOC for OU7**	**Surficial Soil**	**Sediment**	**Surface Water**	**TRV**
1,1-DICHLOROETHANE		2	1	3	4
1,1-DICHLOROETHENE		2	1	1	
1,2,4-TRICHLOROBENZENE		2	1	1	
1,2-DICHLOROETHANE		2	1	1	
1,2-DICHLOROETHENE		2	1	1	
2-BUTANONE	X	2	1	1	
2-METHYLNAPHTHALENE		2	1	1	
4,4'-DDT		2	1	1	
ACENAPHTHENE	X	2	1	1	
ACENAPHTHYLENE		2	1	1	
ACETONE	X	2	3	3	4
ALDRIN		2	1	1	
ANTHRACENE	X	2	3	1	4
ANTIMONY	X	2	3	3	4
AROCLOR-1248		1	1	1	
AROCLOR-1254		1	1	1	
AROCLOR-1260		1	1	1	
BENZENE		2	1	3	4
BENZO(a)PYRENE	X	2	3	1	4
BENZO(b)FLUORANTHENE	X	2	3	1	4
BENZO(ghi)PERYLENE	X	2	3	1	4
BENZO(k)FLUORANTHENE	X	2	3	1	4
BENZOIC ACID	X	2	1	1	
BENZYL ALCOHOL		2	1	1	
BIS(2-CHLOROISOPROPYL)ETHER	X	2	1	1	
CHLOROFORM		2	1	1	
COBALT	X	2	3	1	4
delta-BHC		2	1	1	
DI-n-BUTYL PHTHALATE	X	2	1	1	
DI-n-OCTYL PHTHALATE		2	1	1	
DIBENZO(a,h)ANTHRACENE		2	1	1	
DIBENZOFURAN		2	1	1	
DIELDRIN		2	1	1	
ENDOSULFAN SULFATE		2	1	1	
ENDRIN KETONE		2	1	1	
FLUORENE	X	2	1	1	
gamma-BHC (LINDANE)		2	1	1	
HEPTACHLOR		2	1	1	
HEPTACHLOR EPOXIDE		2	1	1	
INDENO(1,2,3-cd)PYRENE	X	2	3	1	4
ISOPHORONE		2	1	1	
MERCURY		2	3	3	4
METHOXYCHLOR		2	1	1	
METHYLENE CHLORIDE	X	2	1	3	4
NAPHTHALENE		2	1	1	
PENTACHLOROPHENOL		2	1	1	
PHENOL		2	1	1	
SILVER		2	3	1	4
TETRACHLOROETHENE		2	1	1	
THALLIUM	X	2	3	1	4
TRICHLOROETHENE		2	1	1	
VINYL ACETATE	X	2	1	1	

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Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU6 North Spray Field Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU6 NORTH SPRAY FIELD		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***			
Analyte	**PCOC for OU6**	**Surficial Soil**	**Sediment**	**Surface Water**	**TRV**
1,1,1-TRICHLOROETHANE		2	2	2	
1,1-DICHLOROETHANE		2	2	2	
1,1-DICHLOROETHENE		2	2	2	
1,2,4-TRICHLOROBENZENE	X	2	2	2	
1,2-DICHLOROETHANE	X	2	2	2	
1,2-DICHLOROETHENE	X	2	2	2	
2-BUTANONE	X	2	2	2	
2-METHYLNAPHTHALENE	X	2	2	2	
4,4'-DDT		2	2	2	
4-METHYL-2-PENTANONE	X	2	2	2	
ACENAPHTHENE	X	2	2	2	
ACENAPHTHYLENE		2	2	2	
ACETONE	X	2	2	2	
ALDRIN	X	2	2	2	
ANTHRACENE	X	2	2	2	
AROCLOR-1248		2	2	2	
AROCLOR-1254	X	2	2	2	
AROCLOR-1260	X	2	2	2	
BENZENE	X	2	2	2	
BENZO(a)ANTHRACENE	X	2	2	2	
BENZO(a)PYRENE	X	2	2	2	
BENZO(b)FLUORANTHENE	X	2	2	2	
BENZO(ghi)PERYLENE	X	2	2	2	
BENZO(k)FLUORANTHENE	X	2	2	2	
BENZOIC ACID	X	2	2	2	
BENZYL ALCOHOL	X	2	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		2	2	2	
BIS(2-ETHYLHEXYL)PHTHALATE	X	2	2	2	
BUTYL BENZYL PHTHALATE	X	2	2	2	
CHLOROFORM	X	2	2	2	
CHRYSENE	X	2	2	2	
delta-BHC		2	2	2	
DI-n-BUTYL PHTHALATE	X	2	2	2	
DI-n-OCTYL PHTHALATE	X	2	2	2	
DIBENZO(a,h)ANTHRACENE	X	2	2	2	
DIBENZOFURAN	X	2	2	2	
DIELDRIN		2	2	2	
ENDOSULFAN SULFATE		2	2	2	
ENDRIN KETONE		2	2	2	
FLUORANTHENE	X	2	2	2	
FLUORENE	X	2	2	2	
gamma-BHC (LINDANE)	X	2	2	2	
HEPTACHLOR	X	2	2	2	
HEPTACHLOR EPOXIDE		2	2	2	
INDENO(1,2,3-cd)PYRENE	X	2	2	2	
ISOPHORONE		2	2	2	
METHOXYCHLOR		2	2	2	
METHYLENE CHLORIDE	X	2	2	2	
MOLYBDENUM	X	1	2	2	
NAPHTHALENE	X	2	2	2	
PENTACHLOROPHENOL		2	2	2	
PHENANTHRENE	X	2	2	2	
PHENOL	X	2	2	2	

Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU6 North Spray Field Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU6 NORTH SPRAY FIELD		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***			
Analyte	**PCOC for OU6**	**Surficial Soil**	**Sediment**	**Surface Water**	**TRV**
PYRENE	X	2	2	2	
SILVER	X	1	2	2	
TETRACHLOROETHENE	X	2	2	2	
TIN		1	2	2	
TOTAL XYLENES		2	2	2	
TRICHLOROETHENE	X	2	2	2	
VINYL ACETATE		2	2	2	

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Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU2 903 Pad Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU2 903 PAD		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***			
Analyte	**PCOC for OU2**	**Surficial Soil**	**Sediment**	**Surface Water**	**TRV**
1,1-DICHLOROETHANE		2	1	1	
1,2,4-TRICHLOROBENZENE		1	1	1	
1,2-DICHLOROETHANE		2	1	1	
2-METHYLNAPHTHALENE		1	1	1	
ACENAPHTHYLENE		1	1	1	
ALDRIN		1	1	1	
AROCLOR-1260	X	1	1	1	
BENZENE		2	1	1	
BENZOIC ACID	X	3	1	3	4
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
delta-BHC	X	1	1	1	
DIBENZOFURAN		3	1	1	4
DIELDRIN		1	1	1	
ENDOSULFAN SULFATE		1	1	1	
ENDRIN KETONE		1	1	1	
HEPTACHLOR		1	1	1	
HEPTACHLOR EPOXIDE		1	1	1	
ISOPHORONE		1	1	1	
METHOXYCHLOR		1	1	1	
NAPHTHALENE		1	1	1	
PENTACHLOROPHENOL		1	1	1	
PHENOL		1	1	1	
VINYL ACETATE		2	1	1	

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Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU5 Ash Pits Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU5 ASH PITS		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***			
Analyte	**PCOC for OU5**	**Surficial Soil**	**Sediment**	**Surface Water**	**TRV**
1,1,1-TRICHLOROETHANE		2	1	1	
1,1-DICHLOROETHANE		2	1	1	
1,1-DICHLOROETHENE		2	1	1	
1,2,4-TRICHLOROBENZENE		2	1	1	
1,2-DICHLOROETHENE		2	1	1	
2-METHYLNAPHTHALENE	X	2	1	1	
4,4'-DDT	X	2	1	1	
4-METHYL-2-PENTANONE		2	1	1	
ACENAPHTHENE	X	1	1	1	
ALDRIN	X	2	1	1	
ANTHRACENE	X	1	1	1	
AROCLOR-1248		2	1	1	
AROCLOR-1254	X	2	1	1	
AROCLOR-1260		2	1	1	
BENZENE		2	1	1	
BENZO(a)ANTHRACENE	X	2	1	1	
BENZO(a)PYRENE	X	1	1	1	
BENZO(b)FLUORANTHENE	X	1	1	1	
BENZO(ghi)PERYLENE	X	1	1	1	
BENZO(k)FLUORANTHENE	X	2	1	1	
BENZYL ALCOHOL		2	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		2	1	1	
BUTYL BENZYL PHTHALATE	X	2	1	1	
CHRYSENE	X	1	1	1	
delta-BHC		2	1	1	
DI-n-BUTYL PHTHALATE	X	2	1	1	
DI-n-OCTYL PHTHALATE	X	2	1	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	1	
DIELDRIN	X	2	1	1	
ENDOSULFAN SULFATE	X	2	1	1	
ENDRIN KETONE	X	2	1	1	
FLUORANTHENE	X	1	1	1	
FLUORENE	X	1	1	1	
gamma-BHC (LINDANE)		2	1	1	
HEPTACHLOR		2	1	1	
HEPTACHLOR EPOXIDE	X	2	1	1	
INDENO(1,2,3-cd)PYRENE	X	1	1	1	
ISOPHORONE	X	2	1	1	
METHOXYCHLOR	X	2	1	1	
NAPHTHALENE	X	1	1	1	
PENTACHLOROPHENOL	X	2	1	1	
PHENANTHRENE	X	1	1	1	
PHENOL	X	2	1	1	
PYRENE	X	1	1	1	
TETRACHLOROETHENE		2	1	1	
TOLUENE	X	2	1	1	
TOTAL XYLENES		2	1	1	
TRICHLOROETHENE		2	1	1	
VINYL ACETATE		2	1	1	
ACENAPHTHYLENE	X	1	1	1	
BENZOIC ACID	X	2	3	1	4
DIBENZOFURAN	X	2	1	1	

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Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU6 Burial Trenches Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU6 BURIAL TRENCHES		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU6	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	2	
1,1-DICHLOROETHANE		2	2	2	
1,1-DICHLOROETHENE		2	2	2	
1,2,4-TRICHLOROBENZENE	X	2	2	2	
1,2-DICHLOROETHANE	X	2	2	2	
1,2-DICHLOROETHENE	X	2	2	2	
2-METHYLNAPHTHALENE	X	2	2	2	
4,4'-DDT		2	2	2	
ACENAPHTHENE	X	2	2	2	
ACENAPHTHYLENE		2	2	2	
ALDRIN	X	2	2	2	
ANTHRACENE	X	2	2	2	
ANTIMONY	X	2	2	2	
AROCLOR-1248		2	2	2	
AROCLOR-1254	X	2	2	2	
AROCLOR-1260	X	2	2	2	
BENZO(a)ANTHRACENE	X	2	2	2	
BENZO(a)PYRENE	X	2	2	2	
BENZO(b)FLUORANTHENE	X	2	2	2	
BENZO(ghi)PERYLENE	X	2	2	2	
BENZO(k)FLUORANTHENE	X	2	2	2	
BENZOIC ACID	X	2	2	2	
BENZYL ALCOHOL	X	2	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		2	2	2	
BIS(2-ETHYLHEXYL)PHTHALATE	X	2	2	2	
BUTYL BENZYL PHTHALATE	X	2	2	2	
CHRYSENE	X	2	2	2	
COBALT	X	2	2	2	
delta-BHC		2	2	2	
DI-n-BUTYL PHTHALATE	X	2	2	2	
DI-n-OCTYL PHTHALATE	X	2	2	2	
DIBENZO(a,h)ANTHRACENE	X	2	2	2	
DIBENZOFURAN	X	2	2	2	
DIELDRIN		2	2	2	
ENDOSULFAN SULFATE		2	2	2	
ENDRIN KETONE		2	2	2	
FLUORANTHENE	X	2	2	2	
FLUORENE	X	2	2	2	
gamma-BHC (LINDANE)	X	2	2	2	
HEPTACHLOR	X	2	2	2	
HEPTACHLOR EPOXIDE		2	2	2	
INDENO(1,2,3-cd)PYRENE	X	2	2	2	
ISOPHORONE		2	2	2	
METHOXYCHLOR		2	2	2	
NAPHTHALENE	X	2	2	2	
NITRATE/NITRITE		2	2	2	
PENTACHLOROPHENOL		2	2	2	
PHENANTHRENE	X	2	2	2	
PHENOL	X	2	2	2	
PYRENE	X	2	2	2	
SILVER	X	2	2	2	

Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU6 Burial Trenches Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU6 BURIAL TRENCHES		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***			
Analyte	**PCOC for OU6**	**Surficial Soil**	**Sediment**	**Surface Water**	**TRV**
TETRACHLOROETHENE	X	2	2	2	
THALLIUM		2	2	2	
TOTAL XYLENES		2	2	2	
VINYL ACETATE		2	2	2	

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Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU1 881 Hillside Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU1 881 HILLSIDE		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***			
Analyte	**PCOC for OU1**	**Surficial Soil**	**Sediment**	**Surface Water**	**TRV**
1,2,4-TRICHLOROBENZENE		1	1	1	
2-METHYLNAPHTHALENE		1	1	1	
4,4'-DDT		1	1	1	
ACENAPHTHYLENE	X	3	1	1	4
AROCLOR-1260		1	1	1	
BENZENE		2	1	1	
BENZOIC ACID		1	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
BUTYL BENZYL PHTHALATE		1	1	1	
delta-BHC		1	1	1	
DIBENZOFURAN		3	1	1	4
DIELDRIN		1	1	1	
ENDOSULFAN SULFATE		1	1	1	
ENDRIN KETONE		1	1	1	
gamma-BHC (LINDANE)		1	1	1	
HEPTACHLOR		1	1	1	
HEPTACHLOR EPOXIDE		1	1	1	
ISOPHORONE		1	1	1	
METHOXYCHLOR		1	1	1	
PHENOL		1	1	1	
VINYL ACETATE		2	1	1	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU5 C-Ponds Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU5 C-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU5	Surficial Soil	Sediment	Surface Water	TRV
1,1-DICHLOROETHANE		2	1	1	
1,1-DICHLOROETHENE		2	1	1	
1,2,4-TRICHLOROBENZENE		1	1	1	
1,2-DICHLOROETHANE		2	1	1	
1,2-DICHLOROETHENE		2	1	1	
2-METHYLNAPHTHALENE	X	1	1	1	
4,4'-DDT	X	1	1	1	
4-METHYL-2-PENTANONE		2	1	1	
ACENAPHTHENE	X	1	1	1	
ACENAPHTHYLENE	X	1	1	1	
ALDRIN	X	1	1	1	
ANTHRACENE	X	1	1	1	
AROCLOR-1248		1	1	1	
AROCLOR-1254	X	1	1	1	
AROCLOR-1260		1	1	1	
BENZENE		2	1	1	
BENZO(a)ANTHRACENE	X	1	1	1	
BENZO(a)PYRENE	X	1	1	1	
BENZO(b)FLUORANTHENE	X	1	1	1	
BENZO(ghi)PERYLENE	X	1	1	1	
BENZO(k)FLUORANTHENE	X	1	1	1	
BENZOIC ACID	X	3	3	3	4
BENZYL ALCOHOL		1	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
CHRYSENE	X	1	1	1	
DI-n-OCTYL PHTHALATE	X	1	1	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	1	
DIBENZOFURAN	X	1	1	1	
DIELDRIN	X	1	1	1	
ENDOSULFAN SULFATE	X	1	1	1	
ENDRIN KETONE	X	1	1	1	
FLUORENE	X	1	1	1	
gamma-BHC (LINDANE)		1	1	1	
HEPTACHLOR		1	1	1	
HEPTACHLOR EPOXIDE	X	1	1	1	
INDENO(1,2,3-cd)PYRENE	X	1	1	1	
ISOPHORONE	X	1	1	1	
METHOXYCHLOR	X	1	1	1	
NAPHTHALENE	X	1	1	1	
PENTACHLOROPHENOL	X	1	1	1	
PHENANTHRENE	X	1	1	1	
TETRACHLOROETHENE		2	1	1	
TOTAL XYLENES		2	1	1	
TRICHLOROETHENE		2	1	1	
VINYL ACETATE		2	1	1	

Reason Codes:

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3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU11 West Spray Field Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU11 WEST SPRAY FIELD		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU11	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	2	
1,1-DICHLOROETHANE		2	2	2	
1,1-DICHLOROETHENE		2	2	2	
1,2,4-TRICHLOROBENZENE		2	2	2	
1,2-DICHLOROETHANE		2	2	2	
1,2-DICHLOROETHENE		2	2	2	
2-METHYLNAPHTHALENE		2	2	2	
4,4'-DDT		2	2	2	
4-METHYL-2-PENTANONE		2	2	2	
ACENAPHTHENE		2	2	2	
ACENAPHTHYLENE		2	2	2	
ALDRIN		2	2	2	
ANTHRACENE		2	2	2	
AROCLOR-1248		2	2	2	
AROCLOR-1254		2	2	2	
AROCLOR-1260		2	2	2	
BENZENE		2	2	2	
BENZO(a)ANTHRACENE		2	2	2	
BENZO(a)PYRENE		2	2	2	
BENZO(b)FLUORANTHENE		2	2	2	
BENZO(ghi)PERYLENE		2	2	2	
BENZO(k)FLUORANTHENE		2	2	2	
BENZOIC ACID		2	2	2	
BENZYL ALCOHOL		2	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		2	2	2	
BUTYL BENZYL PHTHALATE		2	2	2	
CHRYSENE		2	2	2	
delta-BHC		2	2	2	
DI-n-OCTYL PHTHALATE		2	2	2	
DIBENZO(a,h)ANTHRACENE		2	2	2	
DIBENZOFURAN		2	2	2	
DIELDRIN		2	2	2	
ENDOSULFAN SULFATE		2	2	2	
ENDRIN KETONE		2	2	2	
FLUORANTHENE		2	2	2	
FLUORENE		2	2	2	
gamma-BHC (LINDANE)		2	2	2	
HEPTACHLOR		2	2	2	
HEPTACHLOR EPOXIDE		2	2	2	
INDENO(1,2,3-cd)PYRENE		2	2	2	
ISOPHORONE		2	2	2	
MERCURY		1	2	2	
METHOXYCHLOR		2	2	2	
NAPHTHALENE		2	2	2	
PENTACHLOROPHENOL		2	2	2	
PHENANTHRENE		2	2	2	
PHENOL		2	2	2	
PYRENE		2	2	2	
SILVER		1	2	2	
TETRACHLOROETHENE		2	2	2	
TOTAL XYLENES		2	2	2	
VINYL ACETATE		2	2	2	

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Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU2 Mound Area Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU2 MOUND AREA		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU2	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	2	
1,1-DICHLOROETHANE		2	2	2	
1,1-DICHLOROETHENE		2	2	2	
1,2,4-TRICHLOROBENZENE		1	2	2	
1,2-DICHLOROETHANE		2	2	2	
1,2-DICHLOROETHENE		2	2	2	
2-METHYLNAPHTHALENE		1	2	2	
4,4'-DDT	X	1	2	2	
ACENAPHTHENE		1	2	2	
ACENAPHTHYLENE		1	2	2	
ALDRIN		1	2	2	
ANTHRACENE		1	2	2	
ANTIMONY		2	2	2	
AROCLOR-1248		1	2	2	
BENZO(k)FLUORANTHENE	X	1	2	2	
BENZOIC ACID	X	3	2	2	4
BENZYL ALCOHOL		1	2	2	
BERYLLIUM		1	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	2	
BUTYL BENZYL PHTHALATE		1	2	2	
CADMIUM		1	2	2	
delta-BHC	X	1	2	2	
DI-n-OCTYL PHTHALATE		1	2	2	
DIBENZO(a,h)ANTHRACENE		1	2	2	
DIBENZOFURAN		1	2	2	
DIELDRIN		1	2	2	
ENDOSULFAN SULFATE		1	2	2	
ENDRIN KETONE		1	2	2	
FLUORENE		1	2	2	
gamma-BHC (LINDANE)		1	2	2	
HEPTACHLOR		1	2	2	
HEPTACHLOR EPOXIDE		1	2	2	
ISOPHORONE		1	2	2	
MERCURY		1	2	2	
METHOXYCHLOR		1	2	2	
MOLYBDENUM		1	2	2	
NAPHTHALENE		1	2	2	
NITRATE/NITRITE		2	2	2	
PENTACHLOROPHENOL		1	2	2	
PHENOL		1	2	2	
SELENIUM		1	2	2	
SILVER		1	2	2	
TIN		1	2	2	
TOTAL XYLENES		2	2	2	
VINYL ACETATE		2	2	2	

Reason Codes:

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2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU10 Outside Closures Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU10 OUTSIDE CLOSURES		Unable to estimate risk to wildlife for the following reasons: REASON CODE:			
Analyte	PCOC for OU10	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	2	
1,1-DICHLOROETHANE		2	2	2	
1,1-DICHLOROETHENE		2	2	2	
1,2,4-TRICHLOROBENZENE		2	2	2	
1,2-DICHLOROETHANE		2	2	2	
1,2-DICHLOROETHENE		2	2	2	
2-BUTANONE		2	2	2	
2-METHYLNAPHTHALENE		2	2	2	
4,4'-DDT		2	2	2	
4-METHYL-2-PENTANONE		2	2	2	
ACENAPHTHENE		2	2	2	
ACENAPHTHYLENE		2	2	2	
ACETONE		2	2	2	
ALDRIN		2	2	2	
ALUMINUM		2	2	2	
ANTHRACENE		2	2	2	
ANTIMONY		2	2	2	
AROCLOR-1248		2	2	2	
AROCLOR-1254		2	2	2	
AROCLOR-1260		2	2	2	
ARSENIC		2	2	2	
BARIUM		2	2	2	
BENZENE		2	2	2	
BENZO(a)ANTHRACENE		2	2	2	
BENZO(a)PYRENE		2	2	2	
BENZO(b)FLUORANTHENE		2	2	2	
BENZO(ghi)PERYLENE		2	2	2	
BENZO(k)FLUORANTHENE		2	2	2	
BENZOIC ACID		2	2	2	
BENZYL ALCOHOL		2	2	2	
BERYLLIUM		2	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		2	2	2	
BIS(2-ETHYLHEXYL)PHTHALATE		2	2	2	
BUTYL BENZYL PHTHALATE		2	2	2	
CADMIUM		2	2	2	
CHLOROFORM		2	2	2	
CHROMIUM		2	2	2	
CHRYSENE		2	2	2	
COBALT		2	2	2	
COPPER		2	2	2	
delta-BHC		2	2	2	
DI-n-BUTYL PHTHALATE		2	2	2	
DI-n-OCTYL PHTHALATE		2	2	2	
DIBENZO(a,h)ANTHRACENE		2	2	2	
DIBENZOFURAN		2	2	2	
DIELDRIN		2	2	2	
ENDOSULFAN SULFATE		2	2	2	
ENDRIN KETONE		2	2	2	
FLUORANTHENE		2	2	2	
FLUORENE		2	2	2	
gamma-BHC (LINDANE)		2	2	2	
HEPTACHLOR		2	2	2	
HEPTACHLOR EPOXIDE		2	2	2	

Analytes not Included in the Wildlife Ecological Screen for Preble's Meadow Jumping Mice in the OU10 Outside Closures Source Area at RFETS

PREBLE'S MEADOW JUMPING MICE OU10 OUTSIDE CLOSURES		Unable to estimate risk to wildlife for the following reasons: REASON CODE:			
Analyte	PCOC for OU10	Surficial Soil	Sediment	Surface Water	TRV
INDENO(1,2,3-cd)PYRENE		2	2	2	
ISOPHORONE		2	2	2	
LEAD		2	2	2	
LITHIUM		2	2	2	
MAGNESIUM		2	2	2	
MANGANESE		2	2	2	
MERCURY		2	2	2	
METHOXYCHLOR		2	2	2	
METHYLENE CHLORIDE		2	2	2	
MOLYBDENUM		2	2	2	
NAPHTHALENE		2	2	2	
NICKEL		2	2	2	
NITRATE/NITRITE		2	2	2	
PENTACHLOROPHENOL		2	2	2	
PHENANTHRENE		2	2	2	
PHENOL		2	2	2	
PYRENE		2	2	2	
SELENIUM		2	2	2	
SILVER		2	2	2	
STRONTIUM		2	2	2	
TETRACHLOROETHENE		2	2	2	
THALLIUM		2	2	2	
TIN		2	2	2	
TOLUENE		2	2	2	
TOTAL XYLENES		2	2	2	
TRICHLOROETHENE		2	2	2	
VANADIUM		2	2	2	
VINYL ACETATE		2	2	2	
ZINC		2	2	2	

Note: No data exists for OU10 Outside Closures, therefore, all analytes are listed above.

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Analytes not Included in the Wildlife Ecological Screen for American Kestrels

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU2 East Trenches Source Area at RFETS

AMERICAN KESTRELS OU2 EAST TRENCHES		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU2**	**Surficial Soil**	**TRV**
1,1,1-TRICHLOROETHANE		2	
1,1-DICHLOROETHANE		2	
1,1-DICHLOROETHENE		2	
1,2,4-TRICHLOROBENZENE		1	
1,2-DICHLOROETHANE		2	
1,2-DICHLOROETHENE		2	
2-BUTANONE		2	
2-METHYLNAPHTHALENE		1	
4,4'-DDT	X	1	
4-METHYL-2-PENTANONE		2	
ACENAPHTHENE		1	
ACENAPHTHYLENE		1	
ACETONE		2	
ALDRIN		1	
ANTHRACENE		1	
ANTIMONY		1	
AROCLOR-1248		1	
AROCLOR-1254	X	1	
AROCLOR-1260	X	1	
BENZENE		2	
BENZO(ghi)PERYLENE	X	1	
BENZO(k)FLUORANTHENE	X	1	
BENZOIC ACID	X	3	4
BENZYL ALCOHOL		1	
BIS(2-CHLOROISOPROPYL)ETHER		1	
BUTYL BENZYL PHTHALATE		1	
CHLOROFORM		2	
delta-BHC	X	1	
DI-n-BUTYL PHTHALATE	X	1	
DI-n-OCTYL PHTHALATE		1	
DIBENZO(a,h)ANTHRACENE		1	
DIBENZOFURAN		1	
DIELDRIN		1	
ENDOSULFAN SULFATE		1	
ENDRIN KETONE		1	
FLUORENE		1	
gamma-BHC (LINDANE)		1	
HEPTACHLOR		1	
HEPTACHLOR EPOXIDE		1	
INDENO(1,2,3-cd)PYRENE	X	1	
ISOPHORONE		1	
MERCURY		1	
METHOXYCHLOR		1	
METHYLENE CHLORIDE		2	
MOLYBDENUM		1	
NAPHTHALENE		1	
NITRATE/NITRITE		2	
PENTACHLOROPHENOL		1	
PHENOL		1	
TETRACHLOROETHENE		2	
THALLIUM		1	
TOLUENE		2	
TOTAL XYLENES		2	
TRICHLOROETHENE		2	
VINYL ACETATE		2	

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4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU6 B-Ponds Source Area at RFETS

AMERICAN KESTRELS OU6 B-PONDS		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU6**	**Surficial Soil**	**TRV**
1,1,1-TRICHLOROETHANE		2	
1,1-DICHLOROETHANE		2	
1,1-DICHLOROETHENE		2	
1,2,4-TRICHLOROBENZENE	X	1	
1,2-DICHLOROETHANE	X	2	
1,2-DICHLOROETHENE	X	2	
2-BUTANONE	X	2	
2-METHYLNAPHTHALENE	X	1	
4,4'-DDT		1	
4-METHYL-2-PENTANONE	X	2	
ACENAPHTHENE	X	1	
ACENAPHTHYLENE		1	
ACETONE	X	2	
ALDRIN	X	1	
ANTHRACENE	X	1	
ANTIMONY	X	1	
AROCLOR-1248		1	
AROCLOR-1254	X	1	
AROCLOR-1260	X	1	
BENZENE	X	2	
BENZO(a)ANTHRACENE	X	1	
BENZO(a)PYRENE	X	1	
BENZO(b)FLUORANTHENE	X	1	
BENZO(ghi)PERYLENE	X	1	
BENZO(k)FLUORANTHENE	X	1	
BENZOIC ACID	X	3	4
BENZYL ALCOHOL	X	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	
BIS(2-ETHYLHEXYL)PHTHALATE	X	1	
BUTYL BENZYL PHTHALATE	X	1	
CADMIUM		1	
CHLOROFORM	X	2	
CHRYSENE	X	1	
delta-BHC		1	
DI-n-BUTYL PHTHALATE	X	1	
DI-n-OCTYL PHTHALATE	X	1	
DIBENZO(a,h)ANTHRACENE	X	1	
DIBENZOFURAN	X	1	
DIELDRIN		1	
ENDOSULFAN SULFATE		1	
ENDRIN KETONE		1	
FLUORANTHENE	X	1	
FLUORENE	X	1	
gamma-BHC (LINDANE)	X	1	
HEPTACHLOR	X	1	
HEPTACHLOR EPOXIDE		1	
INDENO(1,2,3-cd)PYRENE	X	1	
ISOPHORONE		1	
METHOXYCHLOR		1	
METHYLENE CHLORIDE	X	2	
MOLYBDENUM	X	1	
NAPHTHALENE	X	1	
NITRATE/NITRITE		2	
PENTACHLOROPHENOL		1	

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU6 B-Ponds Source Area at RFETS

AMERICAN KESTRELS OU6 B-PONDS		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU6**	**Surficial Soil**	**TRV**
PHENANTHRENE	X	1	
PHENOL	X	1	
PYRENE	X	1	
TETRACHLOROETHENE	X	2	
TOLUENE	X	2	
TOTAL XYLENES		2	
TRICHLOROETHENE	X	2	
VINYL ACETATE		2	

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Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU6 A-Ponds Source Area at RFETS

AMERICAN KESTRELS OU6 A-PONDS		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU6**	**Surficial Soil**	**TRV**
1,1,1-TRICHLOROETHANE		2	
1,2-DICHLOROETHANE	X	2	
2-METHYLNAPHTHALENE	X	1	
ACENAPHTHENE	X	1	
ACETONE	X	2	
ALDRIN	X	1	
ANTHRACENE	X	1	
AROCLOR-1248		1	
AROCLOR-1254	X	1	
AROCLOR-1260	X	1	
BENZENE	X	2	
BENZO(a)ANTHRACENE	X	1	
BENZO(a)PYRENE	X	1	
BENZO(b)FLUORANTHENE	X	1	
BENZO(ghi)PERYLENE	X	1	
BENZO(k)FLUORANTHENE	X	1	
BIS(2-ETHYLHEXYL)PHTHALATE	X	1	
BUTYL BENZYL PHTHALATE	X	1	
CHRYSENE	X	1	
DI-n-BUTYL PHTHALATE	X	1	
DI-n-OCTYL PHTHALATE	X	1	
DIBENZO(a,h)ANTHRACENE	X	1	
DIELDRIN		1	
FLUORANTHENE	X	1	
FLUORENE	X	1	
HEPTACHLOR	X	1	
HEPTACHLOR EPOXIDE		1	
INDENO(1,2,3-cd)PYRENE	X	1	
MERCURY	X	1	
METHYLENE CHLORIDE	X	2	
NAPHTHALENE	X	1	
NITRATE/NITRITE		2	
PENTACHLOROPHENOL		1	
PHENANTHRENE	X	1	
PHENOL	X	1	
PYRENE	X	1	
SELENIUM		1	
TETRACHLOROETHENE	X	2	
THALLIUM		1	
TOLUENE	X	2	
TOTAL XYLENES		2	
TRICHLOROETHENE	X	2	
gamma-BHC (LINDANE)	X	1	
1,1-DICHLOROETHANE		2	
1,1-DICHLOROETHENE		2	
1,2,4-TRICHLOROBENZENE	X	1	
1,2-DICHLOROETHENE	X	2	
2-BUTANONE	X	2	
4-METHYL-2-PENTANONE	X	2	
ACENAPHTHYLENE		1	
ANTIMONY	X	1	
BENZOIC ACID	X	3	4
BENZYL ALCOHOL	X	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU6 A-Ponds Source Area at RFETS

AMERICAN KESTRELS OU6 A-PONDS		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU6**	**Surficial Soil**	**TRV**
CHLOROFORM	X	2	
DIBENZOFURAN	X	1	
ENDOSULFAN SULFATE		1	
ENDRIN KETONE		1	
ISOPHORONE		1	
METHOXYCHLOR		1	
VINYL ACETATE		2	

Reason Codes:

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3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU6 Soil Dump Areas Source Area at RFETS

AMERICAN KESTRELS OU6 SOIL DUMP AREAS		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU6**	**Surficial Soil**	**TRV**
1,1,1-TRICHLOROETHANE		2	
1,1-DICHLOROETHANE		2	
1,1-DICHLOROETHENE		2	
1,2,4-TRICHLOROBENZENE	X	1	
1,2-DICHLOROETHANE	X	2	
1,2-DICHLOROETHENE	X	2	
2-BUTANONE	X	2	
2-METHYLNAPHTHALENE	X	1	
4,4'-DDT		1	
4-METHYL-2-PENTANONE	X	2	
ACENAPHTHYLENE		1	
ACETONE	X	2	
ALDRIN	X	1	
ANTIMONY	X	1	
AROCLOR-1248		1	
AROCLOR-1260	X	1	
BENZENE	X	2	
BENZOIC ACID	X	1	
BENZYL ALCOHOL	X	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	
CHLOROFORM	X	2	
delta-BHC		1	
DIBENZOFURAN	X	3	4
DIELDRIN		1	
ENDOSULFAN SULFATE		1	
ENDRIN KETONE		1	
gamma-BHC (LINDANE)	X	1	
HEPTACHLOR	X	1	
HEPTACHLOR EPOXIDE		1	
ISOPHORONE		1	
METHOXYCHLOR		1	
METHYLENE CHLORIDE	X	2	
MOLYBDENUM	X	1	
PENTACHLOROPHENOL		1	
PHENOL	X	1	
SELENIUM		1	
SILVER	X	1	
TETRACHLOROETHENE	X	2	
TOLUENE	X	2	
TOTAL XYLENES		2	
TRICHLOROETHENE	X	2	
VINYL ACETATE		2	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU2 903 Pad Source Area at RFETS

AMERICAN KESTRELS OU2 903 PAD		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU2**	**Surficial Soil**	**TRV**
1,1,1-TRICHLOROETHANE		2	
1,2-DICHLOROETHANE		2	
2-METHYLNAPHTHALENE		1	
4,4'-DDT	X	1	
ACETONE		2	
ALDRIN		1	
AROCLOR-1260	X	1	
BENZENE		2	
BUTYL BENZYL PHTHALATE		1	
DI-n-OCTYL PHTHALATE		1	
DIELDRIN		1	
HEPTACHLOR		1	
HEPTACHLOR EPOXIDE		1	
METHYLENE CHLORIDE		2	
NAPHTHALENE		1	
PENTACHLOROPHENOL		1	
PHENOL		1	
SILVER		1	
TETRACHLOROETHENE		2	
TOLUENE		2	
TOTAL XYLENES		2	
TRICHLOROETHENE		2	
delta-BHC	X	1	
gamma-BHC (LINDANE)		1	
1,1-DICHLOROETHANE		2	
1,1-DICHLOROETHENE		2	
1,2,4-TRICHLOROBENZENE		1	
1,2-DICHLOROETHENE		2	
2-BUTANONE		2	
4-METHYL-2-PENTANONE		2	
ACENAPHTHYLENE		1	
ANTIMONY		3	4
BENZOIC ACID	X	3	4
BENZYL ALCOHOL		1	
BIS(2-CHLOROISOPROPYL)ETHER		1	
CHLOROFORM		2	
DIBENZOFURAN		3	4
ENDOSULFAN SULFATE		1	
ENDRIN KETONE		1	
ISOPHORONE		1	
METHOXYCHLOR		1	
VINYL ACETATE		2	

Reason Codes:

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3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU1 881 Hillside Source Area at RFETS

AMERICAN KESTRELS OU1 881 HILLSIDE		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU1**	**Surficial Soil**	**TRV**
1,1,1-TRICHLOROETHANE	X	2	
1,1-DICHLOROETHANE	X	2	
1,1-DICHLOROETHENE	X	2	
1,2,4-TRICHLOROBENZENE		1	
1,2-DICHLOROETHANE	X	2	
1,2-DICHLOROETHENE	X	2	
2-BUTANONE		2	
2-METHYLNAPHTHALENE		1	
4,4'-DDT		1	
4-METHYL-2-PENTANONE		2	
ACENAPHTHYLENE	X	3	4
ACETONE		2	
ALDRIN		1	
ANTIMONY		1	
AROCLOR-1260		1	
BENZENE		2	
BENZOIC ACID		1	
BENZYL ALCOHOL		3	4
BIS(2-CHLOROISOPROPYL)ETHER		1	
BIS(2-ETHYLHEXYL)PHTHALATE		1	
BUTYL BENZYL PHTHALATE		1	
CHLOROFORM		2	
delta-BHC		1	
DI-n-BUTYL PHTHALATE		1	
DI-n-OCTYL PHTHALATE		1	
DIBENZOFURAN		3	4
DIELDRIN		1	
ENDOSULFAN SULFATE		1	
ENDRIN KETONE		1	
gamma-BHC (LINDANE)		1	
HEPTACHLOR		1	
HEPTACHLOR EPOXIDE		1	
ISOPHORONE		1	
METHOXYCHLOR		1	
METHYLENE CHLORIDE		2	
PENTACHLOROPHENOL		1	
PHENOL		1	
SILVER		1	
TETRACHLOROETHENE	X	2	
TOLUENE	X	2	
TOTAL XYLENES	X	2	
TRICHLOROETHENE	X	2	
VINYL ACETATE		2	

Reason Codes:

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3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU5 Ash Pits Source Area at RFETS

AMERICAN KESTRELS OU5 ASH PITS		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU5**	**Surficial Soil**	**TRV**
1,1,1-TRICHLOROETHANE		2	
1,1-DICHLOROETHANE		2	
1,1-DICHLOROETHENE		2	
1,2,4-TRICHLOROBENZENE		2	
1,2-DICHLOROETHANE		2	
1,2-DICHLOROETHENE		2	
2-BUTANONE		2	
2-METHYLNAPHTHALENE	X	2	
4,4'-DDT	X	2	
4-METHYL-2-PENTANONE		2	
ACENAPHTHENE	X	1	
ACENAPHTHYLENE	X	1	
ACETONE		2	
ALDRIN	X	2	
ANTHRACENE	X	1	
ANTIMONY	X	1	
AROCLOR-1248		2	
AROCLOR-1254	X	2	
AROCLOR-1260		2	
BENZENE		2	
BENZO(a)ANTHRACENE	X	2	
BENZO(a)PYRENE	X	1	
BENZO(b)FLUORANTHENE	X	1	
BENZO(ghi)PERYLENE	X	1	
BENZO(k)FLUORANTHENE	X	2	
BENZOIC ACID	X	2	
BENZYL ALCOHOL		2	
BIS(2-CHLOROISOPROPYL)ETHER		2	
BIS(2-ETHYLHEXYL)PHTHALATE	X	2	
BUTYL BENZYL PHTHALATE	X	2	
CHLOROFORM		2	
CHRYSENE	X	1	
delta-BHC		2	
DI-n-BUTYL PHTHALATE	X	2	
DI-n-OCTYL PHTHALATE	X	2	
DIBENZO(a,h)ANTHRACENE	X	1	
DIBENZOFURAN	X	2	
DIELDRIN	X	2	
ENDOSULFAN SULFATE	X	2	
ENDRIN KETONE	X	2	
FLUORANTHENE	X	1	
FLUORENE	X	1	
gamma-BHC (LINDANE)		2	
HEPTACHLOR		2	
HEPTACHLOR EPOXIDE	X	2	
INDENO(1,2,3-cd)PYRENE	X	1	
ISOPHORONE	X	2	
METHOXYCHLOR	X	2	
METHYLENE CHLORIDE	X	2	
NAPHTHALENE	X	1	
NITRATE/NITRITE		2	
PENTACHLOROPHENOL	X	2	
PHENANTHRENE	X	1	
PHENOL	X	2	

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU5 Ash Pits Source Area at RFETS

AMERICAN KESTRELS OU5 ASH PITS		Unable to estimate risk to wildlife for the following reasons: REASON CODE	
Analyte	PCOC in OU5	Surficial Soil	TRV
PYRENE	X	1	
TETRACHLOROETHENE		2	
TOLUENE	X	2	
TOTAL XYLENES		2	
TRICHLOROETHENE		2	
VINYL ACETATE		2	

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4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU5 Old Landfill Source Area at RFETS

AMERICAN KESTRELS OU5 OLD LANDFILL		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU5**	**Surficial Soil**	**TRV**
1,1,1-TRICHLOROETHANE		1	
1,2-DICHLOROETHANE		1	
ACETONE		1	
AROCLOR-1248		1	
AROCLOR-1260		1	
BENZENE		1	
HEPTACHLOR		1	
METHYLENE CHLORIDE	X	1	
NITRATE/NITRITE		2	
PENTACHLOROPHENOL	X	1	
PHENOL	X	1	
TETRACHLOROETHENE		1	
TOLUENE	X	1	
TOTAL XYLENES		1	
TRICHLOROETHENE		1	
delta-BHC		1	
gamma-BHC (LINDANE)		1	
1,1-DICHLOROETHANE		1	
1,1-DICHLOROETHENE		1	
1,2,4-TRICHLOROBENZENE		1	
1,2-DICHLOROETHENE		1	
2-BUTANONE		1	
4-METHYL-2-PENTANONE		1	
ACENAPHTHYLENE	X	3	4
ANTIMONY	X	3	4
BENZOIC ACID	X	3	4
BENZYL ALCOHOL		1	
BIS(2-CHLOROISOPROPYL)ETHER		1	
CHLOROFORM		1	
DIBENZOFURAN	X	3	4
ENDOSULFAN SULFATE	X	3	4
ENDRIN KETONE	X	3	4
ISOPHORONE	X	1	
METHOXYCHLOR	X	3	4
VINYL ACETATE		1	

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3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU7 Downgradient Areas Source Area at RFETS

AMERICAN KESTRELS OU7 DOWNGRADIENT AREAS		Unable to estimate risk to wildlife for the following reasons: REASON CODE	
Analyte	PCOC in OU7	Surficial Soil	TRV
1,1,1-TRICHLOROETHANE		2	
1,1-DICHLOROETHANE		2	
1,1-DICHLOROETHENE		2	
1,2,4-TRICHLOROBENZENE		2	
1,2-DICHLOROETHANE		2	
1,2-DICHLOROETHENE		2	
2-BUTANONE	X	2	
2-METHYLNAPHTHALENE		2	
4,4'-DDT		2	
4-METHYL-2-PENTANONE		2	
ACENAPHTHENE	X	2	
ACENAPHTHYLENE		2	
ACETONE	X	2	
ALDRIN		2	
ANTHRACENE	X	2	
ANTIMONY	X	2	
AROCLOR-1248		1	
AROCLOR-1254		1	
AROCLOR-1260		1	
ARSENIC	X	2	
BENZENE		2	
BENZO(a)ANTHRACENE	X	2	
BENZO(a)PYRENE	X	2	
BENZO(b)FLUORANTHENE	X	2	
BENZO(ghi)PERYLENE	X	2	
BENZO(k)FLUORANTHENE	X	2	
BENZOIC ACID	X	2	
BENZYL ALCOHOL		2	
BERYLLIUM	X	2	
BIS(2-CHLOROISOPROPYL)ETHER	X	2	
BIS(2-ETHYLHEXYL)PHTHALATE	X	2	
BUTYL BENZYL PHTHALATE		2	
CHLOROFORM		2	
CHRYSENE	X	2	
COBALT	X	2	
delta-BHC		2	
DI-n-BUTYL PHTHALATE	X	2	
DI-n-OCTYL PHTHALATE		2	
DIBENZO(a,h)ANTHRACENE		2	
DIBENZOFURAN		2	
DIELDRIN		2	
ENDOSULFAN SULFATE		2	
ENDRIN KETONE		2	
FLUORANTHENE	X	2	
FLUORENE	X	2	
gamma-BHC (LINDANE)		2	
HEPTACHLOR		2	
HEPTACHLOR EPOXIDE		2	
INDENO(1,2,3-cd)PYRENE	X	2	
ISOPHORONE		2	
LITHIUM	X	2	
METHOXYCHLOR		2	
METHYLENE CHLORIDE	X	2	
MOLYBDENUM	X	2	

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU7 Downgradient Areas Source Area at RFETS

AMERICAN KESTRELS OU7 DOWNGRADIENT AREAS		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU7**	**Surficial Soil**	**TRV**
NAPHTHALENE		2	
NICKEL	X	2	
PENTACHLOROPHENOL		2	
PHENANTHRENE	X	2	
PHENOL		2	
PYRENE	X	2	
TETRACHLOROETHENE		2	
THALLIUM	X	2	
TOLUENE	X	2	
TOTAL XYLENES		2	
TRICHLOROETHENE		2	
VINYL ACETATE	X	2	

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Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU4 Downgradient Source Area at RFETS

AMERICAN KESTRELS OU4 DOWNGRADIENT		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU4**	**Surficial Soil**	**TRV**
1,1,1-TRICHLOROETHANE		2	
1,2-DICHLOROETHANE		2	
2-METHYLNAPHTHALENE		1	
4,4'-DDT		1	
ACENAPHTHENE		1	
ACETONE		2	
ALDRIN		1	
ANTHRACENE		1	
AROCLOR-1248		1	
AROCLOR-1254	X	1	
AROCLOR-1260		1	
BENZENE		2	
DIELDRIN		1	
FLUORENE		1	
HEPTACHLOR		1	
HEPTACHLOR EPOXIDE		1	
METHYLENE CHLORIDE		2	
MOLYBDENUM		1	
NAPHTHALENE		1	
PENTACHLOROPHENOL		1	
PHENOL		1	
SELENIUM		1	
SILVER	X	1	
TETRACHLOROETHENE		2	
TOLUENE		2	
TOTAL XYLENES		2	
TRICHLOROETHENE		2	
delta-BHC		1	
gamma-BHC (LINDANE)		1	
1,1-DICHLOROETHANE		2	
1,1-DICHLOROETHENE		2	
1,2,4-TRICHLOROBENZENE		1	
1,2-DICHLOROETHENE		2	
2-BUTANONE		2	
4-METHYL-2-PENTANONE		2	
ACENAPHTHYLENE		1	
ANTIMONY		1	
BENZOIC ACID		1	
BENZYL ALCOHOL		1	
BIS(2-CHLOROISOPROPYL)ETHER		1	
CHLOROFORM		2	
DIBENZOFURAN		1	
ENDOSULFAN SULFATE		1	
ENDRIN KETONE		1	
ISOPHORONE		1	
METHOXYCHLOR		1	
VINYL ACETATE		2	

Reason Codes:

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3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU11 West Spray Field Source Area at RFETS

AMERICAN KESTRELS OU11 WEST SPRAY FIELD		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU11**	**Surficial Soil**	**TRV**
1,1,1-TRICHLOROETHANE		2	
1,1-DICHLOROETHANE		2	
1,1-DICHLOROETHENE		2	
1,2,4-TRICHLOROBENZENE		2	
1,2-DICHLOROETHANE		2	
1,2-DICHLOROETHENE		2	
2-BUTANONE		2	
2-METHYLNAPHTHALENE		2	
4,4'-DDT		2	
4-METHYL-2-PENTANONE		2	
ACENAPHTHENE		2	
ACENAPHTHYLENE		2	
ACETONE		2	
ALDRIN		2	
ANTHRACENE		2	
ANTIMONY		3	4
AROCLOR-1248		2	
AROCLOR-1254		2	
AROCLOR-1260		2	
BENZENE		2	
BENZO(a)ANTHRACENE		2	
BENZO(a)PYRENE		2	
BENZO(b)FLUORANTHENE		2	
BENZO(ghi)PERYLENE		2	
BENZO(k)FLUORANTHENE		2	
BENZOIC ACID		2	
BENZYL ALCOHOL		2	
BIS(2-CHLOROISOPROPYL)ETHER		2	
BIS(2-ETHYLHEXYL)PHTHALATE		2	
BUTYL BENZYL PHTHALATE		2	
CHLOROFORM		2	
CHRYSENE		2	
delta-BHC		2	
DI-n-BUTYL PHTHALATE		2	
DI-n-OCTYL PHTHALATE		2	
DIBENZO(a,h)ANTHRACENE		2	
DIBENZOFURAN		2	
DIELDRIN		2	
ENDOSULFAN SULFATE		2	
ENDRIN KETONE		2	
FLUORANTHENE		2	
FLUORENE		2	
gamma-BHC (LINDANE)		2	
HEPTACHLOR		2	
HEPTACHLOR EPOXIDE		2	
INDENO(1,2,3-cd)PYRENE		2	
ISOPHORONE		2	
MERCURY		1	
METHOXYCHLOR		2	
METHYLENE CHLORIDE		2	
NAPHTHALENE		2	
PENTACHLOROPHENOL		2	
PHENANTHRENE		2	
PHENOL		2	

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU11 West Spray Field Source Area at RFETS

AMERICAN KESTRELS OU11 WEST SPRAY FIELD		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU11**	**Surficial Soil**	**TRV**
PYRENE		2	
SILVER		1	
TETRACHLOROETHENE		2	
TOLUENE		2	
TOTAL XYLENES		2	
TRICHLOROETHENE		2	
VINYL ACETATE		2	

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Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU2 Mound Area Source Area at RFETS

AMERICAN KESTRELS OU2 MOUND AREA		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU2**	**Surficial Soil**	**TRV**
1,1,1-TRICHLOROETHANE		2	
1,1-DICHLOROETHANE		2	
1,1-DICHLOROETHENE		2	
1,2,4-TRICHLOROBENZENE		1	
1,2-DICHLOROETHANE		2	
1,2-DICHLOROETHENE		2	
2-BUTANONE		2	
2-METHYLNAPHTHALENE		1	
4,4'-DDT	X	1	
4-METHYL-2-PENTANONE		2	
ACENAPHTHENE		1	
ACENAPHTHYLENE		1	
ACETONE		2	
ALDRIN		1	
ANTHRACENE		1	
ANTIMONY		2	
AROCLOR-1248		1	
BENZENE		2	
BENZO(k)FLUORANTHENE	X	1	
BENZOIC ACID	X	3	4
BENZYL ALCOHOL		1	
BERYLLIUM		1	
BIS(2-CHLOROISOPROPYL)ETHER		1	
BUTYL BENZYL PHTHALATE		1	
CADMIUM		1	
CHLOROFORM		2	
delta-BHC	X	1	
DI-n-BUTYL PHTHALATE	X	1	
DI-n-OCTYL PHTHALATE		1	
DIBENZO(a,h)ANTHRACENE		1	
DIBENZOFURAN		1	
DIELDRIN		1	
ENDOSULFAN SULFATE		1	
ENDRIN KETONE		1	
FLUORENE		1	
gamma-BHC (LINDANE)		1	
HEPTACHLOR		1	
HEPTACHLOR EPOXIDE		1	
ISOPHORONE		1	
MERCURY		1	
METHOXYCHLOR		1	
METHYLENE CHLORIDE		2	
MOLYBDENUM		1	
NAPHTHALENE		1	
NITRATE/NITRITE		2	
PENTACHLOROPHENOL		1	
PHENOL		1	
SELENIUM		1	
SILVER		1	
TETRACHLOROETHENE		2	
TIN		1	
TOLUENE		2	
TOTAL XYLENES		2	
TRICHLOROETHENE		2	
VINYL ACETATE		2	

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3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU5 C-Ponds Source Area at RFETS

AMERICAN KESTRELS OU5 C-PONDS		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU5**	**Surficial Soil**	**TRV**
1,1,1-TRICHLOROETHANE		2	
1,1-DICHLOROETHANE		2	
1,1-DICHLOROETHENE		2	
1,2,4-TRICHLOROBENZENE		1	
1,2-DICHLOROETHANE		2	
1,2-DICHLOROETHENE		2	
2-BUTANONE		2	
2-METHYLNAPHTHALENE	X	1	
4,4'-DDT	X	1	
4-METHYL-2-PENTANONE		2	
ACENAPHTHENE	X	1	
ACENAPHTHYLENE	X	1	
ACETONE		2	
ALDRIN	X	1	
ANTHRACENE	X	1	
ANTIMONY	X	1	
AROCLOR-1248		1	
AROCLOR-1254	X	1	
AROCLOR-1260		1	
BENZENE		2	
BENZO(a)ANTHRACENE	X	1	
BENZO(a)PYRENE	X	1	
BENZO(b)FLUORANTHENE	X	1	
BENZO(ghi)PERYLENE	X	1	
BENZO(k)FLUORANTHENE	X	1	
BENZOIC ACID	X	3	4
BENZYL ALCOHOL		1	
BERYLLIUM		1	
BIS(2-CHLOROISOPROPYL)ETHER		1	
BIS(2-ETHYLHEXYL)PHTHALATE	X	1	
BUTYL BENZYL PHTHALATE	X	1	
CHLOROFORM		2	
CHRYSENE	X	1	
delta-BHC		1	
DI-n-BUTYL PHTHALATE	X	1	
DI-n-OCTYL PHTHALATE	X	1	
DIBENZO(a,h)ANTHRACENE	X	1	
DIBENZOFURAN	X	1	
DIELDRIN	X	1	
ENDOSULFAN SULFATE	X	1	
ENDRIN KETONE	X	1	
FLUORENE	X	1	
gamma-BHC (LINDANE)		1	
HEPTACHLOR		1	
HEPTACHLOR EPOXIDE	X	1	
INDENO(1,2,3-cd)PYRENE	X	1	
ISOPHORONE	X	1	
MERCURY	X	1	
METHOXYCHLOR	X	1	
METHYLENE CHLORIDE	X	2	
MOLYBDENUM		1	
NAPHTHALENE	X	1	
NITRATE/NITRITE		2	
PENTACHLOROPHENOL	X	1	

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU5 C-Ponds Source Area at RFETS

AMERICAN KESTRELS OU5 C-PONDS		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU5**	**Surficial Soil**	**TRV**
PHENANTHRENE	X	1	
PHENOL	X	1	
SILVER	X	1	
TETRACHLOROETHENE		2	
THALLIUM		1	
TOLUENE	X	2	
TOTAL XYLENES		2	
TRICHLOROETHENE		2	
VINYL ACETATE		2	

Reason Codes:

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3 = Analyte detected in medium but not included in screen for other reasons
4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU6 Burial Trenches Source Area at RFETS

AMERICAN KESTRELS OU6 BURIAL TRENCHES		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU6**	**Surficial Soil**	**TRV**
1,1,1-TRICHLOROETHANE		2	
1,2-DICHLOROETHANE	X	2	
2-METHYLNAPHTHALENE	X	2	
4,4'-DDT		2	
ACENAPHTHENE	X	2	
ACETONE	X	2	
ALDRIN	X	2	
ANTHRACENE	X	2	
AROCLOR-1248		2	
AROCLOR-1254	X	2	
AROCLOR-1260	X	2	
ARSENIC	X	2	
BENZENE	X	2	
BENZO(a)ANTHRACENE	X	2	
BENZO(a)PYRENE	X	2	
BENZO(b)FLUORANTHENE	X	2	
BENZO(ghi)PERYLENE	X	2	
BENZO(k)FLUORANTHENE	X	2	
BERYLLIUM		2	
BIS(2-ETHYLHEXYL)PHTHALATE	X	2	
BUTYL BENZYL PHTHALATE	X	2	
CADMIUM		2	
CHRYSENE	X	2	
COBALT	X	2	
DI-n-BUTYL PHTHALATE	X	2	
DI-n-OCTYL PHTHALATE	X	2	
DIBENZO(a,h)ANTHRACENE	X	2	
DIELDRIN		2	
FLUORANTHENE	X	2	
FLUORENE	X	2	
HEPTACHLOR	X	2	
HEPTACHLOR EPOXIDE		2	
INDENO(1,2,3-cd)PYRENE	X	2	
LITHIUM		2	
MERCURY	X	2	
METHYLENE CHLORIDE	X	2	
MOLYBDENUM	X	2	
NAPHTHALENE	X	2	
NICKEL	X	2	
NITRATE/NITRITE		2	
PENTACHLOROPHENOL		2	
PHENANTHRENE	X	2	
PHENOL	X	2	
PYRENE	X	2	
TETRACHLOROETHENE	X	2	
THALLIUM		2	
TOLUENE	X	2	
TOTAL XYLENES		2	
TRICHLOROETHENE	X	2	
delta-BHC		2	
gamma-BHC (LINDANE)	X	2	
1,1-DICHLOROETHANE		2	
1,1-DICHLOROETHENE		2	
1,2,4-TRICHLOROBENZENE	X	2	

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU6 Burial Trenches Source Area at RFETS

AMERICAN KESTRELS OU6 BURIAL TRENCHES		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU6**	**Surficial Soil**	**TRV**
1,2-DICHLOROETHENE	X	2	
2-BUTANONE	X	2	
4-METHYL-2-PENTANONE	X	2	
ACENAPHTHYLENE		2	
ANTIMONY	X	2	
BENZOIC ACID	X	2	
BENZYL ALCOHOL	X	2	
BIS(2-CHLOROISOPROPYL)ETHER		2	
CHLOROFORM	X	2	
DIBENZOFURAN	X	2	
ENDOSULFAN SULFATE		2	
ENDRIN KETONE		2	
ISOPHORONE		2	
METHOXYCHLOR		2	
VINYL ACETATE		2	

Reason Codes:

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4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU6 North Spray Field Source Area at RFETS

AMERICAN KESTRELS OU6 NORTH SPRAY FIELD		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU6**	**Surficial Soil**	**TRV**
1,1,1-TRICHLOROETHANE		2	
1,1-DICHLOROETHANE		2	
1,1-DICHLOROETHENE		2	
1,2,4-TRICHLOROBENZENE	X	2	
1,2-DICHLOROETHANE	X	2	
1,2-DICHLOROETHENE	X	2	
2-BUTANONE	X	2	
2-METHYLNAPHTHALENE	X	2	
4,4'-DDT		2	
4-METHYL-2-PENTANONE	X	2	
ACENAPHTHENE	X	2	
ACENAPHTHYLENE		2	
ACETONE	X	2	
ALDRIN	X	2	
ANTHRACENE	X	2	
ANTIMONY	X	3	4
AROCLOR-1248		2	
AROCLOR-1254	X	2	
AROCLOR-1260	X	2	
BENZENE	X	2	
BENZO(a)ANTHRACENE	X	2	
BENZO(a)PYRENE	X	2	
BENZO(b)FLUORANTHENE	X	2	
BENZO(ghi)PERYLENE	X	2	
BENZO(k)FLUORANTHENE	X	2	
BENZOIC ACID	X	2	
BENZYL ALCOHOL	X	2	
BIS(2-CHLOROISOPROPYL)ETHER		2	
BIS(2-ETHYLHEXYL)PHTHALATE	X	2	
BUTYL BENZYL PHTHALATE	X	2	
CHLOROFORM	X	2	
CHRYSENE	X	2	
delta-BHC		2	
DI-n-BUTYL PHTHALATE	X	2	
DI-n-OCTYL PHTHALATE	X	2	
DIBENZO(a,h)ANTHRACENE	X	2	
DIBENZOFURAN	X	2	
DIELDRIN		2	
ENDOSULFAN SULFATE		2	
ENDRIN KETONE		2	
FLUORANTHENE	X	2	
FLUORENE	X	2	
gamma-BHC (LINDANE)	X	2	
HEPTACHLOR	X	2	
HEPTACHLOR EPOXIDE		2	
INDENO(1,2,3-cd)PYRENE	X	2	
ISOPHORONE		2	
METHOXYCHLOR		2	
METHYLENE CHLORIDE	X	2	
MOLYBDENUM	X	1	
NAPHTHALENE	X	2	
PENTACHLOROPHENOL		2	
PHENANTHRENE	X	2	
PHENOL	X	2	

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU6 North Spray Field Source Area at RFETS

AMERICAN KESTRELS OU6 NORTH SPRAY FIELD		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU6**	**Surficial Soil**	**TRV**
PYRENE	X	2	
SILVER	X	1	
TETRACHLOROETHENE	X	2	
TIN		1	
TOLUENE	X	2	
TOTAL XYLENES		2	
TRICHLOROETHENE	X	2	
VINYL ACETATE		2	

Reason Codes:

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4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU5 Surface Disturbance Source Area at RFETS

AMERICAN KESTRELS OU5 SURFACE DISTURBANCE		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU5**	**Surficial Soil**	**TRV**
1,1,1-TRICHLOROETHANE		2	
1,1-DICHLOROETHANE		2	
1,1-DICHLOROETHENE		2	
1,2,4-TRICHLOROBENZENE		1	
1,2-DICHLOROETHANE		2	
1,2-DICHLOROETHENE		2	
2-BUTANONE		2	
2-METHYLNAPHTHALENE	X	1	
4,4'-DDT	X	1	
4-METHYL-2-PENTANONE		2	
ACENAPHTHENE	X	1	
ACENAPHTHYLENE	X	1	
ACETONE		2	
ALDRIN	X	1	
ANTHRACENE	X	1	
ANTIMONY	X	1	
AROCLOR-1248		1	
AROCLOR-1254	X	1	
AROCLOR-1260		1	
BENZENE		2	
BENZO(a)ANTHRACENE	X	1	
BENZO(a)PYRENE	X	1	
BENZO(b)FLUORANTHENE	X	1	
BENZO(ghi)PERYLENE	X	1	
BENZO(k)FLUORANTHENE	X	1	
BENZOIC ACID	X	1	
BENZYL ALCOHOL		1	
BIS(2-CHLOROISOPROPYL)ETHER		1	
BIS(2-ETHYLHEXYL)PHTHALATE	X	1	
BUTYL BENZYL PHTHALATE	X	1	
CADMIUM		1	
CHLOROFORM		2	
CHRYSENE	X	1	
delta-BHC		1	
DI-n-BUTYL PHTHALATE	X	1	
DI-n-OCTYL PHTHALATE	X	1	
DIBENZO(a,h)ANTHRACENE	X	1	
DIBENZOFURAN	X	1	
DIELDRIN	X	1	
ENDOSULFAN SULFATE	X	1	
ENDRIN KETONE	X	1	
FLUORANTHENE	X	1	
FLUORENE	X	1	
gamma-BHC (LINDANE)		1	
HEPTACHLOR		1	
HEPTACHLOR EPOXIDE	X	1	
INDENO(1,2,3-cd)PYRENE	X	1	
ISOPHORONE	X	1	
METHOXYCHLOR	X	1	
METHYLENE CHLORIDE	X	2	
MOLYBDENUM		1	
NAPHTHALENE	X	1	
NITRATE/NITRITE		2	
PENTACHLOROPHENOL	X	1	

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU5 Surface Disturbance Source Area at RFETS

AMERICAN KESTRELS OU5 SURFACE DISTURBANCE		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***	
Analyte	**PCOC in OU5**	**Surficial Soil**	**TRV**
PHENANTHRENE	X	1	
PHENOL	X	1	
PYRENE	X	1	
SELENIUM		1	
SILVER	X	1	
TETRACHLOROETHENE		2	
THALLIUM		1	
TIN		1	
TOLUENE	X	2	
TOTAL XYLENES		2	
TRICHLOROETHENE		2	
VINYL ACETATE		2	

Reason Codes:

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Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU10 Outside Closures Source Area at RFETS

AMERICAN KESTRELS OU10 OUTSIDE CLOSURES		Unable to estimate risk to wildlife for the following reasons: REASON CODE	
Analyte	PCOC in OU10	Surficial Soil	TRV
1,1,1-TRICHLOROETHANE		2	
1,1-DICHLOROETHANE		2	
1,1-DICHLOROETHENE		2	
1,2,4-TRICHLOROBENZENE		2	
1,2-DICHLOROETHANE		2	
1,2-DICHLOROETHENE		2	
2-BUTANONE		2	
2-METHYLNAPHTHALENE		2	
4,4'-DDT		2	
4-METHYL-2-PENTANONE		2	
ACENAPHTHENE		2	
ACENAPHTHYLENE		2	
ACETONE		2	
ALDRIN		2	
ALUMINUM		2	
ANTHRACENE		2	
ANTIMONY		2	
AROCLOR-1248		2	
AROCLOR-1254		2	
AROCLOR-1260		2	
ARSENIC		2	
BARIUM		2	
BENZENE		2	
BENZO(a)ANTHRACENE		2	
BENZO(a)PYRENE		2	
BENZO(b)FLUORANTHENE		2	
BENZO(ghi)PERYLENE		2	
BENZO(k)FLUORANTHENE		2	
BENZOIC ACID		2	
BENZYL ALCOHOL		2	
BERYLLIUM		2	
BIS(2-CHLOROISOPROPYL)ETHER		2	
BIS(2-ETHYLHEXYL)PHTHALATE		2	
BUTYL BENZYL PHTHALATE		2	
CADMIUM		2	
CHLOROFORM		2	
CHROMIUM		2	
CHRYSENE		2	
COBALT		2	
COPPER		2	
delta-BHC		2	
DI-n-BUTYL PHTHALATE		2	
DI-n-OCTYL PHTHALATE		2	
DIBENZO(a,h)ANTHRACENE		2	
DIBENZOFURAN		2	
DIELDRIN		2	
ENDOSULFAN SULFATE		2	
ENDRIN KETONE		2	
FLUORANTHENE		2	
FLUORENE		2	
gamma-BHC (LINDANE)		2	
HEPTACHLOR		2	
HEPTACHLOR EPOXIDE		2	
INDENO(1,2,3-cd)PYRENE		2	
ISOPHORONE		2	

Analytes not Included in the Wildlife Ecological Screen for American Kestrels in the OU10 Outside Closures Source Area at RFETS

AMERICAN KESTRELS OU10 OUTSIDE CLOSURES		Unable to estimate risk to wildlife for the following reasons: REASON CODE	
Analyte	PCOC in OU10	Surficial Soil	TRV
LEAD		2	
LITHIUM		2	
MAGNESIUM		2	
MANGANESE		2	
MERCURY		2	
METHOXYCHLOR		2	
METHYLENE CHLORIDE		2	
MOLYBDENUM		2	
NAPHTHALENE		2	
NICKEL		2	
NITRATE/NITRITE		2	
PENTACHLOROPHENOL		2	
PHENANTHRENE		2	
PHENOL		2	
PYRENE		2	
SELENIUM		2	
SILVER		2	
STRONTIUM		2	
TETRACHLOROETHENE		2	
THALLIUM		2	
TIN		2	
TOLUENE		2	
TOTAL XYLENES		2	
TRICHLOROETHENE		2	
VANADIUM		2	
VINYL ACETATE		2	
ZINC		2	

Note: No data exists for OU10 Outside Closures, therefore, all analytes are listed above.

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4 = No toxicity reference value (TRV) available for this analyte

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Analytes not Included in the Wildlife Ecological Screen for Great Blue Herons

Analytes not Included in the Wildlife Ecological Screen for Great Blue Herons in the OU5 Old Landfill Source Area at RFETS

GREAT BLUE HERONS OU5 OLD LANDFILL		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU5	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		3	3	4
1,1-DICHLOROETHANE		3	3	4
1,1-DICHLOROETHENE		3	3	4
1,2,4-TRICHLOROBENZENE		3	3	4
1,2-DICHLOROETHANE		3	3	4
1,2-DICHLOROETHENE		3	3	4
2-BUTANONE		3	3	4
2-METHYLNAPHTHALENE	X	3	3	4
4,4'-DDT	X	3	3	4
4-METHYL-2-PENTANONE		3	3	4
ACENAPHTHENE	X	3	3	4
ACENAPHTHYLENE	X	3	3	4
ALDRIN	X	3	3	4
ANTHRACENE	X	3	3	4
AROCLOR-1248		3	3	4
AROCLOR-1260		3	3	4
BENZENE		3	3	4
BENZO(a)PYRENE	X	3	3	4
BENZO(b)FLUORANTHENE	X	3	3	4
BENZO(ghi)PERYLENE	X	3	3	4
BENZO(k)FLUORANTHENE	X	3	3	4
BENZOIC ACID	X	3	3	4
BENZYL ALCOHOL		3	3	4
BIS(2-CHLOROISOPROPYL)ETHER		3	3	4
BUTYL BENZYL PHTHALATE	X	3	3	4
CHLOROFORM		3	3	4
delta-BHC		3	3	4
DI-n-BUTYL PHTHALATE	X	3	3	4
DI-n-OCTYL PHTHALATE	X	3	3	4
DIBENZO(a,h)ANTHRACENE	X	3	3	4
DIBENZOFURAN	X	3	3	4
DIELDRIN	X	3	3	4
ENDOSULFAN SULFATE	X	3	3	4
ENDRIN KETONE	X	3	3	4
FLUORENE	X	3	3	4
gamma-BHC (LINDANE)		3	3	4
HEPTACHLOR		3	3	4
HEPTACHLOR EPOXIDE	X	3	3	4
INDENO(1,2,3-cd)PYRENE	X	3	3	4
ISOPHORONE	X	3	3	4
METHOXYCHLOR	X	3	3	4
NAPHTHALENE	X	3	3	4
PHENOL	X	3	3	4
TOLUENE	X	3	3	4
TOTAL XYLENES		3	3	4
VINYL ACETATE		3	3	4

Reason Codes:

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4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Great Blue Herons in the OU6 A-Ponds Source Area at RFETS

GREAT BLUE HERONS OU6 A-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU6	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		1	1	
1,1-DICHLOROETHANE		1	1	
1,1-DICHLOROETHENE		1	1	
1,2,4-TRICHLOROBENZENE	X	1	1	
1,2-DICHLOROETHANE	X	1	1	
1,2-DICHLOROETHENE	X	1	1	
2-BUTANONE	X	3	1	4
2-METHYLNAPHTHALENE	X	1	1	
4,4'-DDT		1	2	
4-METHYL-2-PENTANONE	X	3	1	4
ACENAPHTHYLENE		1	1	
AROCLOR-1248		1	2	
AROCLOR-1260	X	1	2	
BENZOIC ACID	X	3	1	4
BENZYL ALCOHOL	X	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	
BUTYL BENZYL PHTHALATE	X	1	1	
CHLOROFORM	X	1	1	
delta-BHC		1	2	
DIBENZO(a,h)ANTHRACENE	X	1	1	
DIBENZOFURAN	X	1	1	
DIELDRIN		1	2	
ENDOSULFAN SULFATE		1	2	
ENDRIN KETONE		1	2	
FLUORENE	X	1	1	
gamma-BHC (LINDANE)	X	1	2	
HEPTACHLOR	X	1	2	
HEPTACHLOR EPOXIDE		1	2	
ISOPHORONE		1	1	
METHOXYCHLOR		1	2	
NAPHTHALENE	X	1	1	
NITRATE/NITRITE		2	2	
PENTACHLOROPHENOL		1	1	
TETRACHLOROETHENE	X	1	1	
TIN		1	1	
TOTAL XYLENES		1	1	
TRICHLOROETHENE	X	1	1	
VINYL ACETATE		1	1	

Reason Codes:

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2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Great Blue Herons in the OU6 B-Ponds Source Area at RFETS

GREAT BLUE HERONS OU6 B-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU6	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		1	1	
1,1-DICHLOROETHANE		1	1	
1,1-DICHLOROETHENE		1	1	
1,2,4-TRICHLOROBENZENE	X	3	1	4
1,2-DICHLOROETHENE	X	1	3	4
2-BUTANONE	X	3	1	4
4,4'-DDT		1	2	
4-METHYL-2-PENTANONE	X	1	1	
ACENAPHTHYLENE		1	1	
ALDRIN	X	1	2	
BENZENE	X	1	1	
BENZOIC ACID	X	1	1	
BENZYL ALCOHOL	X	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	
CHLOROFORM	X	1	3	4
delta-BHC		1	2	
DIBENZOFURAN	X	3	1	4
DIELDRIN		1	2	
ENDOSULFAN SULFATE		1	2	
ENDRIN KETONE		1	2	
HEPTACHLOR EPOXIDE		1	2	
ISOPHORONE		1	1	
METHOXYCHLOR		1	2	
NITRATE/NITRITE		2	2	
PENTACHLOROPHENOL		1	1	
TOTAL XYLENES		1	1	
VINYL ACETATE		1	1	

Reason Codes:

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2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Great Blue Herons in the OU5 C-Ponds Source Area at RFETS

GREAT BLUE HERONS OU5 C-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU5	Sediment	Surface Water	TRV
1,1-DICHLOROETHANE		1	1	
1,1-DICHLOROETHENE		1	1	
1,2,4-TRICHLOROBENZENE		1	1	
1,2-DICHLOROETHANE		1	1	
1,2-DICHLOROETHENE		1	1	
2-BUTANONE		3	3	4
2-METHYLNAPHTHALENE	X	1	1	
4,4'-DDT	X	1	1	
4-METHYL-2-PENTANONE		1	1	
ACENAPHTHENE	X	1	1	
ACENAPHTHYLENE	X	1	1	
ALDRIN	X	1	1	
ANTHRACENE	X	1	1	
AROCLOR-1260		1	1	
BENZENE		1	1	
BENZO(a)ANTHRACENE	X	1	1	
BENZO(a)PYRENE	X	1	1	
BENZO(b)FLUORANTHENE	X	1	1	
BENZO(ghi)PERYLENE	X	1	1	
BENZO(k)FLUORANTHENE	X	1	1	
BENZOIC ACID	X	3	3	4
BENZYL ALCOHOL		1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	
CHLOROFORM		1	3	4
CHRYSENE	X	1	1	
DI-n-OCTYL PHTHALATE	X	1	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	
DIBENZOFURAN	X	1	1	
DIELDRIN	X	1	1	
ENDOSULFAN SULFATE	X	1	1	
ENDRIN KETONE	X	1	1	
FLUORENE	X	1	1	
gamma-BHC (LINDANE)		1	1	
HEPTACHLOR		1	1	
HEPTACHLOR EPOXIDE	X	1	1	
INDENO(1,2,3-cd)PYRENE	X	1	1	
ISOPHORONE	X	1	1	
METHOXYCHLOR	X	1	1	
NAPHTHALENE	X	1	1	
PENTACHLOROPHENOL	X	1	1	
PHENANTHRENE	X	1	1	
PYRENE	X	1	1	
TETRACHLOROETHENE		1	1	
TOTAL XYLENES		1	1	
TRICHLOROETHENE		1	1	
VINYL ACETATE		1	1	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Great Blue Herons in the OU1 881 Hillside Source Area at RFETS

GREAT BLUE HERONS OU1 881 HILLSIDE		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU1	Sediment	Surface Water	TRV
1,1-DICHLOROETHANE	X	1	3	4
1,1-DICHLOROETHENE	X	1	3	4
1,2,4-TRICHLOROBENZENE		1	1	
1,2-DICHLOROETHENE	X	1	3	4
2-BUTANONE		3	3	4
2-METHYLNAPHTHALENE		1	1	
4,4'-DDT		1	1	
4-METHYL-2-PENTANONE		1	1	
ACENAPHTHENE	X	1	1	
ACENAPHTHYLENE	X	1	1	
ANTHRACENE	X	1	1	
AROCLOR-1248	X	1	1	
AROCLOR-1254	X	1	1	
AROCLOR-1260		1	1	
BENZENE		1	1	
BENZO(a)ANTHRACENE	X	1	1	
BENZO(a)PYRENE	X	1	1	
BENZO(ghi)PERYLENE	X	1	1	
BENZOIC ACID		1	1	
BENZYL ALCOHOL		1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	
BUTYL BENZYL PHTHALATE		1	1	
CHLOROFORM		1	1	
delta-BHC		1	1	
DI-n-BUTYL PHTHALATE		1	1	
DI-n-OCTYL PHTHALATE		1	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	
DIBENZOFURAN		1	1	
DIELDRIN		1	1	
ENDOSULFAN SULFATE		1	1	
ENDRIN KETONE		1	1	
FLUORENE	X	1	1	
gamma-BHC (LINDANE)		1	1	
HEPTACHLOR		1	1	
HEPTACHLOR EPOXIDE		1	1	
INDENO(1,2,3-cd)PYRENE	X	1	1	
ISOPHORONE		1	1	
METHOXYCHLOR		1	1	
NAPHTHALENE	X	1	1	
PENTACHLOROPHENOL		1	1	
PHENOL		1	1	
VINYL ACETATE		1	1	

Reason Codes:

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4 – No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Great Blue Herons in the OU5 Ash Pits Source Area at RFETS

GREAT BLUE HERONS OU5 ASH PITS		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU5	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		3	3	4
1,1-DICHLOROETHANE		3	3	4
1,1-DICHLOROETHENE		3	3	4
1,2,4-TRICHLOROBENZENE		3	3	4
1,2-DICHLOROETHENE		3	3	4
2-BUTANONE		3	3	4
2-METHYLNAPHTHALENE	X	3	3	4
4,4'-DDT	X	3	3	4
4-METHYL-2-PENTANONE		3	3	4
ACENAPHTHENE	X	3	3	4
ACENAPHTHYLENE	X	3	3	4
ALDRIN	X	3	3	4
ANTHRACENE	X	3	3	4
AROCLOR-1248		3	3	4
AROCLOR-1254	X	3	3	4
AROCLOR-1260		3	3	4
BENZENE		3	3	4
BENZO(a)ANTHRACENE	X	3	3	4
BENZO(a)PYRENE	X	3	3	4
BENZO(b)FLUORANTHENE	X	3	3	4
BENZO(ghi)PERYLENE	X	3	3	4
BENZO(k)FLUORANTHENE	X	3	3	4
BENZOIC ACID	X	3	3	4
BENZYL ALCOHOL		3	3	4
BIS(2-CHLOROISOPROPYL)ETHER		3	3	4
BUTYL BENZYL PHTHALATE	X	3	3	4
CHLOROFORM		3	3	4
CHRYSENE	X	3	3	4
delta-BHC		3	3	4
DI-n-BUTYL PHTHALATE	X	3	3	4
DI-n-OCTYL PHTHALATE	X	3	3	4
DIBENZO(a,h)ANTHRACENE	X	3	3	4
DIBENZOFURAN	X	3	3	4
DIELDRIN	X	3	3	4
ENDOSULFAN SULFATE	X	3	3	4
ENDRIN KETONE	X	3	3	4
FLUORANTHENE	X	3	3	4
FLUORENE	X	3	3	4
gamma-BHC (LINDANE)		3	3	4
HEPTACHLOR		3	3	4
HEPTACHLOR EPOXIDE	X	3	3	4
INDENO(1,2,3-cd)PYRENE	X	3	3	4
ISOPHORONE	X	3	3	4
METHOXYCHLOR	X	3	3	4
NAPHTHALENE	X	3	3	4
PENTACHLOROPHENOL	X	3	3	4
PHENANTHRENE	X	3	3	4
PHENOL	X	3	3	4
PYRENE	X	3	3	4
TETRACHLOROETHENE		3	3	4
TOLUENE	X	3	3	4
TOTAL XYLENES		3	3	4
TRICHLOROETHENE		3	3	4
VINYL ACETATE		3	3	4

Reason Codes:

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4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Great Blue Herons in the OU2 903 Pad Source Area at RFETS

GREAT BLUE HERONS OU2 903 PAD		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC for OU2	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		1	1	
1,2-DICHLOROETHANE		1	1	
2-METHYLNAPHTHALENE		1	1	
ACENAPHTHENE		1	1	
ALDRIN		1	1	
ANTHRACENE		1	1	
AROCLOR-1248		1	1	
AROCLOR-1260	X	1	1	
BENZENE		1	1	
BENZO(ghi)PERYLENE	X	1	1	
BUTYL BENZYL PHTHALATE		1	1	
DIBENZO(a,h)ANTHRACENE		1	1	
DIELDRIN		1	1	
FLUORENE		1	1	
HEPTACHLOR		1	1	
HEPTACHLOR EPOXIDE		1	1	
INDENO(1,2,3-cd)PYRENE	X	1	1	
NAPHTHALENE		1	1	
PENTACHLOROPHENOL		1	1	
PHENOL		1	1	
TOTAL XYLENES		1	1	
delta-BHC	X	1	1	
1,1-DICHLOROETHANE		1	1	
1,1-DICHLOROETHENE		1	1	
1,2,4-TRICHLOROBENZENE		1	1	
1,2-DICHLOROETHENE		1	3	4
2-BUTANONE		3	1	4
4-METHYL-2-PENTANONE		3	1	4
ACENAPHTHYLENE		1	1	
BENZOIC ACID	X	1	3	4
BENZYL ALCOHOL		1	3	4
BIS(2-CHLOROISOPROPYL)ETHER		1	1	
CHLOROFORM		1	3	4
DIBENZOFURAN		1	1	
ENDOSULFAN SULFATE		1	1	
ENDRIN KETONE		1	1	
ISOPHORONE		1	1	
METHOXYCHLOR		1	1	
VINYL ACETATE		1	1	

Reason Codes:

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3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

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Analytes not Included in the Wildlife Ecological Screen for Mallards

Analytes not Included in the Wildlife Ecological Screen for Mallards in the OU6 A-Ponds Source Area at RFETS

MALLARDS OU6 A-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC in OU6	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	1	1	
1,1-DICHLOROETHANE		2	1	1	
1,1-DICHLOROETHENE		2	1	1	
1,2,4-TRICHLOROBENZENE	X	1	1	1	
1,2-DICHLOROETHANE	X	2	1	1	
1,2-DICHLOROETHENE	X	2	1	1	
2-BUTANONE	X	2	3	1	4
2-METHYLNAPHTHALENE	X	1	1	1	
4-METHYL-2-PENTANONE	X	2	3	1	4
ACENAPHTHYLENE		1	1	1	
AROCLOR-1248		1	1	2	
BENZOIC ACID	X	3	3	1	4
BENZYL ALCOHOL	X	1	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
BUTYL BENZYL PHTHALATE	X	1	1	1	
CHLOROFORM	X	2	1	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	1	
DIBENZOFURAN	X	1	1	1	
DIELDRIN		1	1	2	
ENDOSULFAN SULFATE		1	1	2	
ENDRIN KETONE		1	1	2	
FLUORENE	X	1	1	1	
gamma-BHC (LINDANE)	X	1	1	2	
HEPTACHLOR	X	1	1	2	
HEPTACHLOR EPOXIDE		1	1	2	
ISOPHORONE		1	1	1	
METHOXYCHLOR		1	1	2	
NAPHTHALENE	X	1	1	1	
NITRATE/NITRITE		2	2	2	
PENTACHLOROPHENOL		1	1	1	
TETRACHLOROETHENE	X	2	1	1	
TOTAL XYLENES		2	1	1	
TRICHLOROETHENE	X	2	1	1	
VINYL ACETATE		2	1	1	

Reason Codes:

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Analytes not Included in the Wildlife Ecological Screen for Mallards in the OU5 C-Ponds Source Area at RFETS

MALLARDS OU5 C-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC in OU5	Surficial Soil	Sediment	Surface Water	TRV
1,1-DICHLOROETHANE		2	1	1	
1,1-DICHLOROETHENE		2	1	1	
1,2,4-TRICHLOROBENZENE		1	1	1	
1,2-DICHLOROETHANE		2	1	1	
1,2-DICHLOROETHENE		2	1	1	
2-BUTANONE		2	3	3	4
2-METHYLNAPHTHALENE	X	1	1	1	
4,4'-DDT	X	1	1	1	
4-METHYL-2-PENTANONE		2	1	1	
ACENAPHTHENE	X	1	1	1	
ACENAPHTHYLENE	X	1	1	1	
ALDRIN	X	1	1	1	
ANTHRACENE	X	1	1	1	
AROCLOR-1248		1	1	1	
AROCLOR-1254	X	1	1	1	
AROCLOR-1260		1	1	1	
BENZENE		2	1	1	
BENZO(a)ANTHRACENE	X	1	1	1	
BENZO(a)PYRENE	X	1	1	1	
BENZO(b)FLUORANTHENE	X	1	1	1	
BENZO(ghi)PERYLENE	X	1	1	1	
BENZO(k)FLUORANTHENE	X	1	1	1	
BENZOIC ACID	X	3	3	3	4
BENZYL ALCOHOL		1	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
CHLOROFORM		2	1	3	4
CHRYSENE	X	1	1	1	
DI-n-OCTYL PHTHALATE	X	1	1	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	1	
DIBENZOFURAN	X	1	1	1	
DIELDRIN	X	1	1	1	
ENDOSULFAN SULFATE	X	1	1	1	
ENDRIN KETONE	X	1	1	1	
FLUORENE	X	1	1	1	
gamma-BHC (LINDANE)		1	1	1	
HEPTACHLOR		1	1	1	
HEPTACHLOR EPOXIDE	X	1	1	1	
INDENO(1,2,3-cd)PYRENE	X	1	1	1	
ISOPHORONE	X	1	1	1	
METHOXYCHLOR	X	1	1	1	
NAPHTHALENE	X	1	1	1	
PENTACHLOROPHENOL	X	1	1	1	
PHENANTHRENE	X	1	1	1	
TETRACHLOROETHENE		2	1	1	
TOTAL XYLENES		2	1	1	
TRICHLOROETHENE		2	1	1	
VINYL ACETATE		2	1	1	

Reason Codes:

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4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mallards in the OU6 B-Ponds Source Area at RFETS

MALLARDS OU6 B-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC in OU6	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	1	1	
1,1-DICHLOROETHANE		2	1	1	
1,1-DICHLOROETHENE		2	1	1	
1,2,4-TRICHLOROBENZENE	X	1	3	1	4
1,2-DICHLOROETHENE	X	2	1	3	4
2-BUTANONE	X	2	3	1	4
4,4'-DDT		1	1	2	
4-METHYL-2-PENTANONE	X	2	1	1	
ACENAPHTHYLENE		1	1	1	
ALDRIN	X	1	1	2	
BENZENE	X	2	1	1	
BENZOIC ACID	X	3	1	1	4
BENZYL ALCOHOL	X	1	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
CHLOROFORM	X	2	1	3	4
delta-BHC		1	1	2	
DIBENZOFURAN	X	1	3	1	4
DIELDRIN		1	1	2	
ENDOSULFAN SULFATE		1	1	2	
ENDRIN KETONE		1	1	2	
HEPTACHLOR EPOXIDE		1	1	2	
ISOPHORONE		1	1	1	
METHOXYCHLOR		1	1	2	
NITRATE/NITRITE		2	2	2	
PENTACHLOROPHENOL		1	1	1	
TOTAL XYLENES		2	1	1	
VINYL ACETATE		2	1	1	

Reason Codes:

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3 = Analyte detected in medium but not included in screen for other reasons
4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mallards in the OU5 Old Landfill Source Area at RFETS

MALLARDS OU5 OLD LANDFILL		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU5	Surficial Soil	Sediment	Surface Water	TRV
1,1-DICHLOROETHANE		1	1	1	
1,1-DICHLOROETHENE		1	1	1	
1,2,4-TRICHLOROBENZENE		1	1	1	
1,2-DICHLOROETHANE		1	1	1	
1,2-DICHLOROETHENE		1	1	1	
2-BUTANONE		1	1	3	4
4-METHYL-2-PENTANONE		1	1	1	
ACENAPHTHYLENE	X	3	1	1	4
AROCLOR-1248		1	1	1	
BENZENE		1	1	1	
BENZOIC ACID	X	3	1	1	4
BENZYL ALCOHOL		1	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
CHLOROFORM		1	1	3	4
delta-BHC		1	1	1	
DIBENZOFURAN	X	3	1	1	4
ENDOSULFAN SULFATE	X	3	1	1	4
ENDRIN KETONE	X	3	1	1	4
gamma-BHC (LINDANE)		1	1	1	
HEPTACHLOR		1	1	1	
ISOPHORONE	X	1	1	1	
METHOXYCHLOR	X	3	1	1	4
VINYL ACETATE		1	1	1	

Reason Codes:

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3 = Analyte detected in medium but not included in screen for other reasons
4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mallards in the OU2 903 Pad Source Area at RFETS

MALLARDS OU2 903 PAD		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC in OU2	Surficial Soil	Sediment	Surface Water	TRV
1,1-DICHLOROETHANE		2	1	1	
1,1-DICHLOROETHENE		2	1	1	
1,2,4-TRICHLOROBENZENE		1	1	1	
1,2-DICHLOROETHANE		2	1	1	
1,2-DICHLOROETHENE		2	1	3	4
2-BUTANONE		2	3	1	4
2-METHYLNAPHTHALENE		1	1	1	
4-METHYL-2-PENTANONE		2	3	1	4
ACENAPHTHYLENE		1	1	1	
ALDRIN		1	1	1	
AROCLOR-1260	X	1	1	1	
BENZENE		2	1	1	
BENZOIC ACID	X	3	1	3	4
BENZYL ALCOHOL		1	1	3	4
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
CHLOROFORM		2	1	3	4
delta-BHC	X	1	1	1	
DIBENZOFURAN		3	1	1	4
DIELDRIN		1	1	1	
ENDOSULFAN SULFATE		1	1	1	
ENDRIN KETONE		1	1	1	
HEPTACHLOR		1	1	1	
HEPTACHLOR EPOXIDE		1	1	1	
ISOPHORONE		1	1	1	
METHOXYCHLOR		1	1	1	
NAPHTHALENE		1	1	1	
PENTACHLOROPHENOL		1	1	1	
PHENOL		1	1	1	
VINYL ACETATE		2	1	1	

Reason Codes:

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2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mallards in the OU1 881 Hillside Source Area at RFETS

MALLARDS OU1 881 HILLSIDE		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC in OU1	Surficial Soil	Sediment	Surface Water	TRV
1,1-DICHLOROETHANE	X	2	1	3	4
1,1-DICHLOROETHENE	X	2	1	3	4
1,2,4-TRICHLOROBENZENE		1	1	1	
1,2-DICHLOROETHENE	X	2	1	3	4
2-BUTANONE		2	3	3	4
2-METHYLNAPHTHALENE		1	1	1	
4,4'-DDT		1	1	1	
4-METHYL-2-PENTANONE		2	1	1	
ACENAPHTHYLENE	X	3	1	1	4
AROCLOR-1260		1	1	1	
BENZENE		2	1	1	
BENZOIC ACID		1	1	1	
BENZYL ALCOHOL		3	1	1	4
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
BUTYL BENZYL PHTHALATE		1	1	1	
CHLOROFORM		2	1	1	
delta-BHC		1	1	1	
DIBENZOFURAN		3	1	1	4
DIELDRIN		1	1	1	
ENDOSULFAN SULFATE		1	1	1	
ENDRIN KETONE		1	1	1	
gamma-BHC (LINDANE)		1	1	1	
HEPTACHLOR		1	1	1	
HEPTACHLOR EPOXIDE		1	1	1	
ISOPHORONE		1	1	1	
METHOXYCHLOR		1	1	1	
PHENOL		1	1	1	
VINYL ACETATE		2	1	1	

Reason Codes:

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2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mallards in the OU5 Ash Pits Source Area at RFETS

MALLARDS OU5 ASH PITS		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC in OU5	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	1	1	
1,1-DICHLOROETHANE		2	1	1	
1,1-DICHLOROETHENE		2	1	1	
1,2,4-TRICHLOROBENZENE		2	1	1	
1,2-DICHLOROETHENE		2	1	1	
2-BUTANONE		2	3	1	4
2-METHYLNAPHTHALENE	X	2	1	1	
4,4'-DDT	X	2	1	1	
4-METHYL-2-PENTANONE		2	1	1	
ACENAPHTHENE	X	1	1	1	
ACENAPHTHYLENE	X	1	1	1	
ALDRIN	X	2	1	1	
ANTHRACENE	X	1	1	1	
AROCLOR-1248		2	1	1	
AROCLOR-1254	X	2	1	1	
AROCLOR-1260		2	1	1	
BENZENE		2	1	1	
BENZO(a)ANTHRACENE	X	2	1	1	
BENZO(a)PYRENE	X	1	1	1	
BENZO(b)FLUORANTHENE	X	1	1	1	
BENZO(ghi)PERYLENE	X	1	1	1	
BENZO(k)FLUORANTHENE	X	2	1	1	
BENZOIC ACID	X	2	3	1	4
BENZYL ALCOHOL		2	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		2	1	1	
BUTYL BENZYL PHTHALATE	X	2	1	1	
CHLOROFORM		2	3	1	4
CHRYSENE	X	1	1	1	
delta-BHC		2	1	1	
DI-n-BUTYL PHTHALATE	X	2	1	1	
DI-n-OCTYL PHTHALATE	X	2	1	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	1	
DIBENZOFURAN	X	2	1	1	
DIELDRIN	X	2	1	1	
ENDOSULFAN SULFATE	X	2	1	1	
ENDRIN KETONE	X	2	1	1	
FLUORANTHENE	X	1	1	1	
FLUORENE	X	1	1	1	
gamma-BHC (LINDANE)		2	1	1	
HEPTACHLOR		2	1	1	
HEPTACHLOR EPOXIDE	X	2	1	1	
INDENO(1,2,3-cd)PYRENE	X	1	1	1	
ISOPHORONE	X	2	1	1	
METHOXYCHLOR	X	2	1	1	
NAPHTHALENE	X	1	1	1	
PENTACHLOROPHENOL	X	2	1	1	
PHENANTHRENE	X	1	1	1	
PHENOL	X	2	1	1	
PYRENE	X	1	1	1	
TETRACHLOROETHENE		2	1	1	
TOLUENE	X	2	1	1	
TOTAL XYLENES		2	1	1	
TRICHLOROETHENE		2	1	1	
VINYL ACETATE		2	1	1	

Reason Codes:

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3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

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Analytes not Included in the Wildlife Ecological Screen for Coyotes

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU6 B-Ponds Source Area at RFETS

COYOTES OU6 B-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU6	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	1	
1,1-DICHLOROETHANE		2	1	
1,1-DICHLOROETHENE		2	1	
1,2,4-TRICHLOROBENZENE	X	1	1	
2-BUTANONE	X	2	1	
2-METHYLNAPHTHALENE	X	1	1	
4,4'-DDT		1	2	
4-METHYL-2-PENTANONE	X	2	1	
ACENAPHTHENE	X	1	1	
ACENAPHTHYLENE		1	1	
ALDRIN	X	1	2	
ANTHRACENE	X	1	1	
AROCLOR-1248		1	2	
AROCLOR-1260	X	1	2	
BENZENE	X	2	1	
BENZO(a)ANTHRACENE	X	1	1	
BENZO(a)PYRENE	X	1	1	
BENZO(b)FLUORANTHENE	X	1	1	
BENZO(ghi)PERYLENE	X	1	1	
BENZO(k)FLUORANTHENE	X	1	1	
BENZOIC ACID	X	3	1	4
BENZYL ALCOHOL	X	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	
BIS(2-ETHYLHEXYL)PHTHALATE	X	1	1	
BUTYL BENZYL PHTHALATE	X	1	1	
CHRYSENE	X	1	1	
delta-BHC		1	2	
DI-n-OCTYL PHTHALATE	X	1	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	
DIBENZOFURAN	X	1	1	
DIELDRIN		1	2	
ENDOSULFAN SULFATE		1	2	
ENDRIN KETONE		1	2	
FLUORANTHENE	X	1	1	
FLUORENE	X	1	1	
gamma-BHC (LINDANE)	X	1	2	
HEPTACHLOR	X	1	2	
HEPTACHLOR EPOXIDE		1	2	
INDENO(1,2,3-cd)PYRENE	X	1	1	
ISOPHORONE		1	1	
METHOXYCHLOR		1	2	
METHYLENE CHLORIDE	X	2	1	
NAPHTHALENE	X	1	1	
NITRATE/NITRITE		2	2	
PENTACHLOROPHENOL		1	1	
PHENANTHRENE	X	1	1	
PHENOL	X	1	1	
PYRENE	X	1	1	
TOTAL XYLENES		2	1	
VINYL ACETATE		2	1	

Reason Codes:

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3 = Analyte detected in medium but not included in screen for other reasons
4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU6 A-Ponds Source Area at RFETS

COYOTES OU6 A-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU6	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	1	
1,1-DICHLOROETHANE		2	1	
1,1-DICHLOROETHENE		2	1	
1,2,4-TRICHLOROBENZENE	X	1	1	
1,2-DICHLOROETHANE	X	2	1	
1,2-DICHLOROETHENE	X	2	1	
2-BUTANONE	X	2	1	
2-METHYLNAPHTHALENE	X	1	1	
4-METHYL-2-PENTANONE	X	2	1	
ACENAPHTHENE	X	1	1	
ACENAPHTHYLENE		1	1	
ALDRIN	X	1	2	
ANTHRACENE	X	1	1	
AROCLOR-1248		1	2	
AROCLOR-1254	X	1	2	
AROCLOR-1260	X	1	2	
BENZENE	X	2	1	
BENZO(a)ANTHRACENE	X	1	1	
BENZO(a)PYRENE	X	1	1	
BENZO(b)FLUORANTHENE	X	1	1	
BENZO(ghi)PERYLENE	X	1	1	
BENZO(k)FLUORANTHENE	X	1	1	
BENZOIC ACID	X	3	1	4
BENZYL ALCOHOL	X	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	
BIS(2-ETHYLHEXYL)PHTHALATE	X	1	1	
BUTYL BENZYL PHTHALATE	X	1	1	
CHLOROFORM	X	2	1	
CHRYSENE	X	1	1	
DI-n-OCTYL PHTHALATE	X	1	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	
DIBENZOFURAN	X	1	1	
DIELDRIN		1	2	
ENDOSULFAN SULFATE		1	2	
ENDRIN KETONE		1	2	
FLUORANTHENE	X	1	1	
FLUORENE	X	1	1	
gamma-BHC (LINDANE)	X	1	2	
HEPTACHLOR	X	1	2	
HEPTACHLOR EPOXIDE		1	2	
INDENO(1,2,3-cd)PYRENE	X	1	1	
ISOPHORONE		1	1	
METHOXYCHLOR		1	2	
NAPHTHALENE	X	1	1	
NITRATE/NITRITE		2	2	
PENTACHLOROPHENOL		1	1	
PHENANTHRENE	X	1	1	
PHENOL	X	1	1	
PYRENE	X	1	1	
TETRACHLOROETHENE	X	2	1	
THALLIUM		1	1	
TOTAL XYLENES		2	1	
TRICHLOROETHENE	X	2	1	
VINYL ACETATE		2	1	

Reason Codes:

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4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU6 Soil Dump Areas Source Area at RFETS

COYOTES OU6 SOIL DUMP AREAS		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU6	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	
1,1-DICHLOROETHANE		2	2	
1,1-DICHLOROETHENE		2	2	
1,2,4-TRICHLOROBENZENE	X	1	2	
1,2-DICHLOROETHANE	X	2	2	
1,2-DICHLOROETHENE	X	2	2	
2-METHYLNAPHTHALENE	X	1	2	
4,4'-DDT		1	2	
ACENAPHTHYLENE		1	2	
ALDRIN	X	1	2	
ANTIMONY	X	1	2	
AROCLOR-1248		1	2	
AROCLOR-1260	X	1	2	
BENZOIC ACID	X	1	2	
BENZYL ALCOHOL	X	1	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	
CHLOROFORM	X	2	2	
delta-BHC		1	2	
DIBENZOFURAN	X	3	2	4
DIELDRIN		1	2	
ENDOSULFAN SULFATE		1	2	
ENDRIN KETONE		1	2	
gamma-BHC (LINDANE)	X	1	2	
HEPTACHLOR	X	1	2	
HEPTACHLOR EPOXIDE		1	2	
ISOPHORONE		1	2	
METHOXYCHLOR		1	2	
SILVER	X	1	2	
TRICHLOROETHENE	X	2	2	
VINYL ACETATE		2	2	

Reason Codes:

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3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU2 East Trenches Source Area at RFETS

COYOTES OU2 EAST TRENCHES		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU2	Surficial Soil	Surface Water	TRV
1,1-DICHLOROETHANE		2	2	
1,2,4-TRICHLOROBENZENE		1	2	
1,2-DICHLOROETHANE		2	2	
ACENAPHTHYLENE		1	2	
ALDRIN		1	2	
ANTIMONY		1	2	
AROCLOR-1248		1	2	
AROCLOR-1260	X	1	2	
BENZO(k)FLUORANTHENE	X	1	2	
BENZOIC ACID	X	3	2	4
BENZYL ALCOHOL		1	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	
BUTYL BENZYL PHTHALATE		1	2	
delta-BHC	X	1	2	
DI-n-OCTYL PHTHALATE		1	2	
DIBENZO(a,h)ANTHRACENE		1	2	
DIBENZOFURAN		1	2	
DIELDRIN		1	2	
ENDOSULFAN SULFATE		1	2	
ENDRIN KETONE		1	2	
gamma-BHC (LINDANE)		1	2	
HEPTACHLOR		1	2	
HEPTACHLOR EPOXIDE		1	2	
ISOPHORONE		1	2	
MERCURY		1	2	
METHOXYCHLOR		1	2	
MOLYBDENUM		1	2	
NITRATE/NITRITE		2	2	
PENTACHLOROPHENOL		1	2	
PHENOL		1	2	
THALLIUM		1	2	
VINYL ACETATE		2	2	

Reason Codes:

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3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU2 903 Pad Source Area at RFETS

COYOTES OU2 903 PAD		***Unable to estimate risk to wildlife for the following reasons:*** ***REASON CODE***		
Analyte	**PCOC in OU2**	**Surficial Soil**	**Surface Water**	**TRV**
1,1-DICHLOROETHANE		2	1	
1,2,4-TRICHLOROBENZENE		1	1	
1,2-DICHLOROETHANE		2	1	
2-METHYLNAPHTHALENE		1	1	
4,4'-DDT	X	1	1	
ACENAPHTHYLENE		1	1	
ALDRIN		1	1	
AROCLOR-1260	X	1	1	
BENZENE		2	1	
BENZOIC ACID	X	3	3	4
BIS(2-CHLOROISOPROPYL)ETHER		1	1	
delta-BHC	X	1	1	
DI-n-OCTYL PHTHALATE		1	1	
DIBENZOFURAN		3	1	4
DIELDRIN		1	1	
ENDOSULFAN SULFATE		1	1	
ENDRIN KETONE		1	1	
gamma-BHC (LINDANE)		1	1	
HEPTACHLOR		1	1	
HEPTACHLOR EPOXIDE		1	1	
ISOPHORONE		1	1	
METHOXYCHLOR		1	1	
NAPHTHALENE		1	1	
PENTACHLOROPHENOL		1	1	
PHENOL		1	1	
VINYL ACETATE		2	1	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU1 881 Hillside Source Area at RFETS

COYOTES OU1 881 HILLSIDE		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU1	Surficial Soil	Surface Water	TRV
1,2,4-TRICHLOROBENZENE		1	1	
2-METHYLNAPHTHALENE		1	1	
4,4'-DDT		1	1	
ACENAPHTHYLENE	X	3	1	4
AROCLOR-1260		1	1	
BENZENE		2	1	
BENZOIC ACID		1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	
BUTYL BENZYL PHTHALATE		1	1	
delta-BHC		1	1	
DIBENZOFURAN		3	1	4
DIELDRIN		1	1	
ENDOSULFAN SULFATE		1	1	
ENDRIN KETONE		1	1	
gamma-BHC (LINDANE)		1	1	
HEPTACHLOR		1	1	
HEPTACHLOR EPOXIDE		1	1	
ISOPHORONE		1	1	
METHOXYCHLOR		1	1	
PHENOL		1	1	
VINYL ACETATE		2	1	

Reason Codes:

1 = Analyte not detected in medium
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3 = Analyte detected in medium but not included in screen for other reasons
4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU4 Downgradient Source Area at RFETS

COYOTES OU4 DOWNGRADIENT		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU4	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	
1,1-DICHLOROETHANE		2	2	
1,1-DICHLOROETHENE		2	2	
1,2,4-TRICHLOROBENZENE		1	2	
1,2-DICHLOROETHANE		2	2	
1,2-DICHLOROETHENE		2	2	
2-BUTANONE		2	2	
2-METHYLNAPHTHALENE		1	2	
4,4'-DDT		1	2	
4-METHYL-2-PENTANONE		2	2	
ACENAPHTHENE		1	2	
ACENAPHTHYLENE		1	2	
ALDRIN		1	2	
ANTHRACENE		1	2	
ANTIMONY		1	2	
AROCLOR-1248		1	2	
AROCLOR-1254	X	1	2	
AROCLOR-1260		1	2	
BENZENE		2	2	
BENZOIC ACID		1	2	
BENZYL ALCOHOL		1	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	
CHLOROFORM		2	2	
delta-BHC		1	2	
DIBENZOFURAN		1	2	
DIELDRIN		1	2	
ENDOSULFAN SULFATE		1	2	
ENDRIN KETONE		1	2	
FLUORENE		1	2	
gamma-BHC (LINDANE)		1	2	
HEPTACHLOR		1	2	
HEPTACHLOR EPOXIDE		1	2	
ISOPHORONE		1	2	
METHOXYCHLOR		1	2	
NAPHTHALENE		1	2	
PENTACHLOROPHENOL		1	2	
PHENOL		1	2	
SILVER	X	1	2	
TOTAL XYLENES		2	2	
TRICHLOROETHENE		2	2	
VINYL ACETATE		2	2	

Reason Codes:

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2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU5 Ash Pits Source Area at RFETS

COYOTES OU5 ASH PITS		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU5	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	1	
1,1-DICHLOROETHANE		2	1	
1,1-DICHLOROETHENE		2	1	
1,2,4-TRICHLOROBENZENE		2	1	
1,2-DICHLOROETHENE		2	1	
2-BUTANONE		2	1	
2-METHYLNAPHTHALENE	X	2	1	
4,4'-DDT	X	2	1	
4-METHYL-2-PENTANONE		2	1	
ACENAPHTHENE	X	1	1	
ACENAPHTHYLENE	X	1	1	
ALDRIN	X	2	1	
ANTHRACENE	X	1	1	
AROCLOR-1248		2	1	
AROCLOR-1254	X	2	1	
AROCLOR-1260		2	1	
BENZENE		2	1	
BENZO(a)ANTHRACENE	X	2	1	
BENZO(a)PYRENE	X	1	1	
BENZO(b)FLUORANTHENE	X	1	1	
BENZO(ghi)PERYLENE	X	1	1	
BENZO(k)FLUORANTHENE	X	2	1	
BENZOIC ACID	X	2	1	
BENZYL ALCOHOL		2	1	
BIS(2-CHLOROISOPROPYL)ETHER		2	1	
BUTYL BENZYL PHTHALATE	X	2	1	
CHLOROFORM		2	1	
CHRYSENE	X	1	1	
delta-BHC		2	1	
DI-n-BUTYL PHTHALATE	X	2	1	
DI-n-OCTYL PHTHALATE	X	2	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	
DIBENZOFURAN	X	2	1	
DIELDRIN	X	2	1	
ENDOSULFAN SULFATE	X	2	1	
ENDRIN KETONE	X	2	1	
FLUORANTHENE	X	1	1	
FLUORENE	X	1	1	
gamma-BHC (LINDANE)		2	1	
HEPTACHLOR		2	1	
HEPTACHLOR EPOXIDE	X	2	1	
INDENO(1,2,3-cd)PYRENE	X	1	1	
ISOPHORONE	X	2	1	
METHOXYCHLOR	X	2	1	
NAPHTHALENE	X	1	1	
PENTACHLOROPHENOL	X	2	1	
PHENANTHRENE	X	1	1	
PHENOL	X	2	1	
PYRENE	X	1	1	
TETRACHLOROETHENE		2	1	
TOLUENE	X	2	1	
TOTAL XYLENES		2	1	
TRICHLOROETHENE		2	1	
VINYL ACETATE		2	1	

Reason Codes:

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2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU7 Downgradient Areas Source Area at RFETS

COYOTES OU7 DOWNGRADIENT AREAS		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU7	Surficial Soil	Surface Water	TRV
1,1-DICHLOROETHANE		2	3	4
1,1-DICHLOROETHENE		2	1	
1,2,4-TRICHLOROBENZENE		2	1	
1,2-DICHLOROETHANE		2	1	
1,2-DICHLOROETHENE		2	1	
2-BUTANONE	X	2	1	
2-METHYLNAPHTHALENE		2	1	
4,4'-DDT		2	1	
ACENAPHTHENE	X	2	1	
ACENAPHTHYLENE		2	1	
ACETONE	X	2	3	4
ALDRIN		2	1	
ANTHRACENE	X	2	1	
ANTIMONY	X	2	3	4
AROCLOR-1248		1	1	
AROCLOR-1254		1	1	
AROCLOR-1260		1	1	
BENZENE		2	3	4
BENZO(a)PYRENE	X	2	1	
BENZO(b)FLUORANTHENE	X	2	1	
BENZO(ghi)PERYLENE	X	2	1	
BENZO(k)FLUORANTHENE	X	2	1	
BENZOIC ACID	X	2	1	
BENZYL ALCOHOL		2	1	
BIS(2-CHLOROISOPROPYL)ETHER	X	2	1	
CHLOROFORM		2	1	
COBALT	X	2	1	
delta-BHC		2	1	
DI-n-BUTYL PHTHALATE	X	2	1	
DI-n-OCTYL PHTHALATE		2	1	
DIBENZO(a,h)ANTHRACENE		2	1	
DIBENZOFURAN		2	1	
DIELDRIN		2	1	
ENDOSULFAN SULFATE		2	1	
ENDRIN KETONE		2	1	
FLUORENE	X	2	1	
gamma-BHC (LINDANE)		2	1	
HEPTACHLOR		2	1	
HEPTACHLOR EPOXIDE		2	1	
INDENO(1,2,3-cd)PYRENE	X	2	1	
ISOPHORONE		2	1	
METHOXYCHLOR		2	1	
METHYLENE CHLORIDE	X	2	3	4
NAPHTHALENE		2	1	
PENTACHLOROPHENOL		2	1	
PHENOL		2	1	
TETRACHLOROETHENE		2	1	
THALLIUM	X	2	1	
TRICHLOROETHENE		2	1	
VINYL ACETATE	X	2	1	

Reason Codes:

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2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU5 Old Landfill Source Area at RFETS

COYOTES OU5 OLD LANDFILL		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU5	Surficial Soil	Surface Water	TRV
1,1-DICHLOROETHANE		1	1	
1,1-DICHLOROETHENE		1	1	
1,2,4-TRICHLOROBENZENE		1	1	
1,2-DICHLOROETHANE		1	1	
1,2-DICHLOROETHENE		1	1	
ACENAPHTHYLENE	X	3	1	4
AROCLOR-1248		1	1	
BENZENE		1	1	
BENZOIC ACID	X	3	1	4
BENZYL ALCOHOL		1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	
delta-BHC		1	1	
DIBENZOFURAN	X	3	1	4
gamma-BHC (LINDANE)		1	1	
HEPTACHLOR		1	1	
VINYL ACETATE		1	1	

Reason Codes:

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2 = Analyte not reported/analyzed in medium
3 = Analyte detected in medium but not included in screen for other reasons
4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU5 C-Ponds Source Area at RFETS

COYOTES OU5 C-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU5	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	1	
1,1-DICHLOROETHANE		2	1	
1,1-DICHLOROETHENE		2	1	
1,2,4-TRICHLOROBENZENE		1	1	
1,2-DICHLOROETHANE		2	1	
1,2-DICHLOROETHENE		2	1	
2-METHYLNAPHTHALENE	X	1	1	
4,4'-DDT	X	1	1	
4-METHYL-2-PENTANONE		2	1	
ACENAPHTHENE	X	1	1	
ACENAPHTHYLENE	X	1	1	
ALDRIN	X	1	1	
ANTHRACENE	X	1	1	
AROCLOR-1248		1	1	
AROCLOR-1254	X	1	1	
AROCLOR-1260		1	1	
BENZENE		2	1	
BENZO(a)ANTHRACENE	X	1	1	
BENZO(a)PYRENE	X	1	1	
BENZO(b)FLUORANTHENE	X	1	1	
BENZO(ghi)PERYLENE	X	1	1	
BENZO(k)FLUORANTHENE	X	1	1	
BENZOIC ACID	X	3	3	4
BENZYL ALCOHOL		1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	
BUTYL BENZYL PHTHALATE	X	1	1	
CHRYSENE	X	1	1	
delta-BHC		1	1	
DI-n-BUTYL PHTHALATE	X	1	1	
DI-n-OCTYL PHTHALATE	X	1	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	
DIBENZOFURAN	X	1	1	
DIELDRIN	X	1	1	
ENDOSULFAN SULFATE	X	1	1	
ENDRIN KETONE	X	1	1	
FLUORENE	X	1	1	
gamma-BHC (LINDANE)		1	1	
HEPTACHLOR		1	1	
HEPTACHLOR EPOXIDE	X	1	1	
INDENO(1,2,3-cd)PYRENE	X	1	1	
ISOPHORONE	X	1	1	
METHOXYCHLOR	X	1	1	
NAPHTHALENE	X	1	1	
PENTACHLOROPHENOL	X	1	1	
PHENANTHRENE	X	1	1	
PHENOL	X	1	1	
TETRACHLOROETHENE		2	1	
TOTAL XYLENES		2	1	
TRICHLOROETHENE		2	1	
VINYL ACETATE		2	1	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU11 West Spray Field Source Area at RFETS

COYOTES OU11 WEST SPRAY FIELD		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU11	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	
1,1-DICHLOROETHANE		2	2	
1,1-DICHLOROETHENE		2	2	
1,2,4-TRICHLOROBENZENE		2	2	
1,2-DICHLOROETHANE		2	2	
1,2-DICHLOROETHENE		2	2	
2-METHYLNAPHTHALENE		2	2	
4,4'-DDT		2	2	
4-METHYL-2-PENTANONE		2	2	
ACENAPHTHENE		2	2	
ACENAPHTHYLENE		2	2	
ALDRIN		2	2	
ANTHRACENE		2	2	
AROCLOR-1248		2	2	
AROCLOR-1254		2	2	
AROCLOR-1260		2	2	
BENZENE		2	2	
BENZO(a)ANTHRACENE		2	2	
BENZO(a)PYRENE		2	2	
BENZO(b)FLUORANTHENE		2	2	
BENZO(ghi)PERYLENE		2	2	
BENZO(k)FLUORANTHENE		2	2	
BENZOIC ACID		2	2	
BENZYL ALCOHOL		2	2	
BIS(2-CHLOROISOPROPYL)ETHER		2	2	
BUTYL BENZYL PHTHALATE		2	2	
CHRYSENE		2	2	
delta-BHC		2	2	
DI-n-OCTYL PHTHALATE		2	2	
DIBENZO(a,h)ANTHRACENE		2	2	
DIBENZOFURAN		2	2	
DIELDRIN		2	2	
ENDOSULFAN SULFATE		2	2	
ENDRIN KETONE		2	2	
FLUORANTHENE		2	2	
FLUORENE		2	2	
gamma-BHC (LINDANE)		2	2	
HEPTACHLOR		2	2	
HEPTACHLOR EPOXIDE		2	2	
INDENO(1,2,3-cd)PYRENE		2	2	
ISOPHORONE		2	2	
MERCURY		1	2	
METHOXYCHLOR		2	2	
NAPHTHALENE		2	2	
PENTACHLOROPHENOL		2	2	
PHENANTHRENE		2	2	
PHENOL		2	2	
PYRENE		2	2	
SILVER		1	2	
TETRACHLOROETHENE		2	2	
TOTAL XYLENES		2	2	
VINYL ACETATE		2	2	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU6 North Spray Field Source Area at RFETS

COYOTES OU6 NORTH SPRAY FIELD		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU6	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	
1,1-DICHLOROETHANE		2	2	
1,1-DICHLOROETHENE		2	2	
1,2,4-TRICHLOROBENZENE	X	2	2	
1,2-DICHLOROETHANE	X	2	2	
1,2-DICHLOROETHENE	X	2	2	
2-BUTANONE	X	2	2	
2-METHYLNAPHTHALENE	X	2	2	
4,4'-DDT		2	2	
4-METHYL-2-PENTANONE	X	2	2	
ACENAPHTHENE	X	2	2	
ACENAPHTHYLENE		2	2	
ACETONE	X	2	2	
ALDRIN	X	2	2	
ANTHRACENE	X	2	2	
AROCLOR-1248		2	2	
AROCLOR-1254	X	2	2	
AROCLOR-1260	X	2	2	
BENZENE	X	2	2	
BENZO(a)ANTHRACENE	X	2	2	
BENZO(a)PYRENE	X	2	2	
BENZO(b)FLUORANTHENE	X	2	2	
BENZO(ghi)PERYLENE	X	2	2	
BENZO(k)FLUORANTHENE	X	2	2	
BENZOIC ACID	X	2	2	
BENZYL ALCOHOL	X	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		2	2	
BIS(2-ETHYLHEXYL)PHTHALATE	X	2	2	
BUTYL BENZYL PHTHALATE	X	2	2	
CHLOROFORM	X	2	2	
CHRYSENE	X	2	2	
delta-BHC		2	2	
DI-n-BUTYL PHTHALATE	X	2	2	
DI-n-OCTYL PHTHALATE	X	2	2	
DIBENZO(a,h)ANTHRACENE	X	2	2	
DIBENZOFURAN	X	2	2	
DIELDRIN		2	2	
ENDOSULFAN SULFATE		2	2	
ENDRIN KETONE		2	2	
FLUORANTHENE	X	2	2	
FLUORENE	X	2	2	
gamma-BHC (LINDANE)	X	2	2	
HEPTACHLOR	X	2	2	
HEPTACHLOR EPOXIDE		2	2	
INDENO(1,2,3-cd)PYRENE	X	2	2	
ISOPHORONE		2	2	
METHOXYCHLOR		2	2	
METHYLENE CHLORIDE	X	2	2	
MOLYBDENUM	X	1	2	
NAPHTHALENE	X	2	2	
PENTACHLOROPHENOL		2	2	
PHENANTHRENE	X	2	2	
PHENOL	X	2	2	
PYRENE	X	2	2	
SILVER	X	1	2	

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU6 North Spray Field Source Area at RFETS

COYOTES OU6 NORTH SPRAY FIELD		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU6	Surficial Soil	Surface Water	TRV
TETRACHLOROETHENE	X	2	2	
TIN		1	2	
TOTAL XYLENES		2	2	
TRICHLOROETHENE	X	2	2	
VINYL ACETATE		2	2	

Reason Codes:

1 = Analyte not detected in medium
2 = Analyte not reported/analyzed in medium
3 = Analyte detected in medium but not included in screen for other reasons
4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU6 Burial Trenches Source Area at RFETS

COYOTES OU6 BURIAL TRENCHES		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU6	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	
1,1-DICHLOROETHANE		2	2	
1,1-DICHLOROETHENE		2	2	
1,2,4-TRICHLOROBENZENE	X	2	2	
1,2-DICHLOROETHANE	X	2	2	
1,2-DICHLOROETHENE	X	2	2	
2-METHYLNAPHTHALENE	X	2	2	
4,4'-DDT		2	2	
ACENAPHTHENE	X	2	2	
ACENAPHTHYLENE		2	2	
ALDRIN	X	2	2	
ANTHRACENE	X	2	2	
ANTIMONY	X	2	2	
AROCLOR-1248		2	2	
AROCLOR-1254	X	2	2	
AROCLOR-1260	X	2	2	
BENZO(a)ANTHRACENE	X	2	2	
BENZO(a)PYRENE	X	2	2	
BENZO(b)FLUORANTHENE	X	2	2	
BENZO(ghi)PERYLENE	X	2	2	
BENZO(k)FLUORANTHENE	X	2	2	
BENZOIC ACID	X	2	2	
BENZYL ALCOHOL	X	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		2	2	
BIS(2-ETHYLHEXYL)PHTHALATE	X	2	2	
BUTYL BENZYL PHTHALATE	X	2	2	
CHRYSENE	X	2	2	
COBALT	X	2	2	
delta-BHC		2	2	
DI-n-BUTYL PHTHALATE	X	2	2	
DI-n-OCTYL PHTHALATE	X	2	2	
DIBENZO(a,h)ANTHRACENE	X	2	2	
DIBENZOFURAN	X	2	2	
DIELDRIN		2	2	
ENDOSULFAN SULFATE		2	2	
ENDRIN KETONE		2	2	
FLUORANTHENE	X	2	2	
FLUORENE	X	2	2	
gamma-BHC (LINDANE)	X	2	2	
HEPTACHLOR	X	2	2	
HEPTACHLOR EPOXIDE		2	2	
INDENO(1,2,3-cd)PYRENE	X	2	2	
ISOPHORONE		2	2	
METHOXYCHLOR		2	2	
NAPHTHALENE	X	2	2	
NITRATE/NITRITE		2	2	
PENTACHLOROPHENOL		2	2	
PHENANTHRENE	X	2	2	
PHENOL	X	2	2	
PYRENE	X	2	2	
TETRACHLOROETHENE	X	2	2	
THALLIUM		2	2	
TOTAL XYLENES		2	2	
VINYL ACETATE		2	2	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU2 Mound Area Source Area at RFETS

COYOTES OU2 MOUND AREA		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU2	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	
1,1-DICHLOROETHANE		2	2	
1,1-DICHLOROETHENE		2	2	
1,2,4-TRICHLOROBENZENE		1	2	
1,2-DICHLOROETHANE		2	2	
1,2-DICHLOROETHENE		2	2	
2-METHYLNAPHTHALENE		1	2	
4,4'-DDT	X	1	2	
ACENAPHTHENE		1	2	
ACENAPHTHYLENE		1	2	
ALDRIN		1	2	
ANTHRACENE		1	2	
ANTIMONY		2	2	
AROCLOR-1248		1	2	
BENZO(k)FLUORANTHENE	X	1	2	
BENZOIC ACID	X	3	2	4
BENZYL ALCOHOL		1	2	
BERYLLIUM		1	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	
BUTYL BENZYL PHTHALATE		1	2	
CADMIUM		1	2	
delta-BHC	X	1	2	
DI-n-OCTYL PHTHALATE		1	2	
DIBENZO(a,h)ANTHRACENE		1	2	
DIBENZOFURAN		1	2	
DIELDRIN		1	2	
ENDOSULFAN SULFATE		1	2	
ENDRIN KETONE		1	2	
FLUORENE		1	2	
gamma-BHC (LINDANE)		1	2	
HEPTACHLOR		1	2	
HEPTACHLOR EPOXIDE		1	2	
ISOPHORONE		1	2	
MERCURY		1	2	
METHOXYCHLOR		1	2	
MOLYBDENUM		1	2	
NAPHTHALENE		1	2	
NITRATE/NITRITE		2	2	
PENTACHLOROPHENOL		1	2	
PHENOL		1	2	
SELENIUM		1	2	
SILVER		1	2	
TIN		1	2	
TOTAL XYLENES		2	2	
VINYL ACETATE		2	2	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU5 Surface Disturbance Source Area at RFETS

COYOTES OU5 SURFACE DISTURBANCE		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU5	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	
1,1-DICHLOROETHANE		2	2	
1,1-DICHLOROETHENE		2	2	
1,2,4-TRICHLOROBENZENE		1	2	
1,2-DICHLOROETHANE		2	2	
1,2-DICHLOROETHENE		2	2	
2-BUTANONE		2	2	
2-METHYLNAPHTHALENE	X	1	2	
4,4'-DDT	X	1	2	
4-METHYL-2-PENTANONE		2	2	
ACENAPHTHENE	X	1	2	
ACENAPHTHYLENE	X	1	2	
ACETONE		2	2	
ALDRIN	X	1	2	
ANTHRACENE	X	1	2	
ANTIMONY	X	1	2	
AROCLOR-1248		1	2	
AROCLOR-1254	X	1	2	
AROCLOR-1260		1	2	
BENZENE		2	2	
BENZO(a)ANTHRACENE	X	1	2	
BENZO(a)PYRENE	X	1	2	
BENZO(b)FLUORANTHENE	X	1	2	
BENZO(ghi)PERYLENE	X	1	2	
BENZO(k)FLUORANTHENE	X	1	2	
BENZOIC ACID	X	1	2	
BENZYL ALCOHOL		1	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	
BIS(2-ETHYLHEXYL)PHTHALATE	X	1	2	
BUTYL BENZYL PHTHALATE	X	1	2	
CADMIUM		1	2	
CHLOROFORM		2	2	
CHRYSENE	X	1	2	
delta-BHC		1	2	
DI-n-BUTYL PHTHALATE	X	1	2	
DI-n-OCTYL PHTHALATE	X	1	2	
DIBENZO(a,h)ANTHRACENE	X	1	2	
DIBENZOFURAN	X	1	2	
DIELDRIN	X	1	2	
ENDOSULFAN SULFATE	X	1	2	
ENDRIN KETONE	X	1	2	
FLUORANTHENE	X	1	2	
FLUORENE	X	1	2	
gamma-BHC (LINDANE)		1	2	
HEPTACHLOR		1	2	
HEPTACHLOR EPOXIDE	X	1	2	
INDENO(1,2,3-cd)PYRENE	X	1	2	
ISOPHORONE	X	1	2	
METHOXYCHLOR	X	1	2	
METHYLENE CHLORIDE	X	2	2	
MOLYBDENUM		1	2	
NAPHTHALENE	X	1	2	
NITRATE/NITRITE		2	2	
PENTACHLOROPHENOL	X	1	2	
PHENANTHRENE	X	1	2	

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU5 Surface Disturbance Source Area at RFETS

COYOTES OU5 SURFACE DISTURBANCE		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU5	Surficial Soil	Surface Water	TRV
PHENOL	X	1	2	
PYRENE	X	1	2	
SELENIUM		1	2	
SILVER	X	1	2	
TETRACHLOROETHENE		2	2	
THALLIUM		1	2	
TIN		1	2	
TOLUENE	X	2	2	
TOTAL XYLENES		2	2	
TRICHLOROETHENE		2	2	
VINYL ACETATE		2	2	

Reason Codes:

1 = Analyte not detected in medium
2 = Analyte not reported/analyzed in medium
3 = Analyte detected in medium but not included in screen for other reasons
4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU10 Outside Closures Source Area at RFETS

COYOTES OU10 OUTSIDE CLOSURES		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU10	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	
1,1-DICHLOROETHANE		2	2	
1,1-DICHLOROETHENE		2	2	
1,2,4-TRICHLOROBENZENE		2	2	
1,2-DICHLOROETHANE		2	2	
1,2-DICHLOROETHENE		2	2	
2-BUTANONE		2	2	
2-METHYLNAPHTHALENE		2	2	
4,4'-DDT		2	2	
4-METHYL-2-PENTANONE		2	2	
ACENAPHTHENE		2	2	
ACENAPHTHYLENE		2	2	
ACETONE		2	2	
ALDRIN		2	2	
ALUMINUM		2	2	
ANTHRACENE		2	2	
ANTIMONY		2	2	
AROCLOR-1248		2	2	
AROCLOR-1254		2	2	
AROCLOR-1260		2	2	
ARSENIC		2	2	
BARIUM		2	2	
BENZENE		2	2	
BENZO(a)ANTHRACENE		2	2	
BENZO(a)PYRENE		2	2	
BENZO(b)FLUORANTHENE		2	2	
BENZO(ghi)PERYLENE		2	2	
BENZO(k)FLUORANTHENE		2	2	
BENZOIC ACID		2	2	
BENZYL ALCOHOL		2	2	
BERYLLIUM		2	2	
BIS(2-CHLOROISOPROPYL)ETHER		2	2	
BIS(2-ETHYLHEXYL)PHTHALATE		2	2	
BUTYL BENZYL PHTHALATE		2	2	
CADMIUM		2	2	
CHLOROFORM		2	2	
CHROMIUM		2	2	
CHRYSENE		2	2	
COBALT		2	2	
COPPER		2	2	
delta-BHC		2	2	
DI-n-BUTYL PHTHALATE		2	2	
DI-n-OCTYL PHTHALATE		2	2	
DIBENZO(a,h)ANTHRACENE		2	2	
DIBENZOFURAN		2	2	
DIELDRIN		2	2	
ENDOSULFAN SULFATE		2	2	
ENDRIN KETONE		2	2	
FLUORANTHENE		2	2	
FLUORENE		2	2	
gamma-BHC (LINDANE)		2	2	
HEPTACHLOR		2	2	
HEPTACHLOR EPOXIDE		2	2	
INDENO(1,2,3-cd)PYRENE		2	2	
ISOPHORONE		2	2	

Analytes not Included in the Wildlife Ecological Screen for Coyotes in the OU10 Outside Closures Source Area at RFETS

COYOTES OU10 OUTSIDE CLOSURES		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU10	Surficial Soil	Surface Water	TRV
LEAD		2	2	
LITHIUM		2	2	
MAGNESIUM		2	2	
MANGANESE		2	2	
MERCURY		2	2	
METHOXYCHLOR		2	2	
METHYLENE CHLORIDE		2	2	
MOLYBDENUM		2	2	
NAPHTHALENE		2	2	
NICKEL		2	2	
NITRATE/NITRITE		2	2	
PENTACHLOROPHENOL		2	2	
PHENANTHRENE		2	2	
PHENOL		2	2	
PYRENE		2	2	
SELENIUM		2	2	
SILVER		2	2	
STRONTIUM		2	2	
TETRACHLOROETHENE		2	2	
THALLIUM		2	2	
TIN		2	2	
TOLUENE		2	2	
TOTAL XYLENES		2	2	
TRICHLOROETHENE		2	2	
VANADIUM		2	2	
VINYL ACETATE		2	2	
ZINC		2	2	

Note: No data exists for OU10 Outside Closures, therefore, all analytes are listed above.

Reason Codes:

1 = Analyte not detected in medium
2 = Analyte not reported/analyzed in medium
3 = Analyte detected in medium but not included in screen for other reasons
4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mule Deer

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU2 903 Pad Source Area at RFETS

MULE DEER OU2 903 PAD		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU2	Surficial Soil	Surface Water	TRV
1,1-DICHLOROETHANE		2	1	
1,2,4-TRICHLOROBENZENE		1	1	
1,2-DICHLOROETHANE		2	1	
2-METHYLNAPHTHALENE		1	1	
4,4'-DDT	X	1	1	
ACENAPHTHYLENE		1	1	
ALDRIN		1	1	
AROCLOR-1260	X	1	1	
BENZENE		2	1	
BENZOIC ACID	X	3	3	4
BIS(2-CHLOROISOPROPYL)ETHER		1	1	
delta-BHC	X	1	1	
DI-n-OCTYL PHTHALATE		1	1	
DIBENZOFURAN		3	1	4
DIELDRIN		1	1	
ENDOSULFAN SULFATE		1	1	
ENDRIN KETONE		1	1	
gamma-BHC (LINDANE)		1	1	
HEPTACHLOR		1	1	
HEPTACHLOR EPOXIDE		1	1	
ISOPHORONE		1	1	
METHOXYCHLOR		1	1	
NAPHTHALENE		1	1	
PENTACHLOROPHENOL		1	1	
PHENOL		1	1	
VINYL ACETATE		2	1	

Reason Codes:

1 = Analyte not detected in medium
2 = Analyte not reported/analyzed in medium
3 = Analyte detected in medium but not included in screen for other reasons
4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU1 881 Hillside Source Area at RFETS

MULE DEER OU1 881 HILLSIDE		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU1	Surficial Soil	Surface Water	TRV
1,2,4-TRICHLOROBENZENE		1	1	
2-METHYLNAPHTHALENE		1	1	
4,4'-DDT		1	1	
ACENAPHTHYLENE	X	3	1	4
AROCLOR-1260		1	1	
BENZENE		2	1	
BENZOIC ACID		1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	
BUTYL BENZYL PHTHALATE		1	1	
delta-BHC		1	1	
DIBENZOFURAN		3	1	4
DIELDRIN		1	1	
ENDOSULFAN SULFATE		1	1	
ENDRIN KETONE		1	1	
gamma-BHC (LINDANE)		1	1	
HEPTACHLOR		1	1	
HEPTACHLOR EPOXIDE		1	1	
ISOPHORONE		1	1	
METHOXYCHLOR		1	1	
PHENOL		1	1	
VINYL ACETATE		2	1	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU2 East Trenches Source Area at RFETS

MULE DEER OU2 EAST TRENCHES		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU2	Surficial Soil	Surface Water	TRV
1,1-DICHLOROETHANE		2	2	
1,2,4-TRICHLOROBENZENE		1	2	
1,2-DICHLOROETHANE		2	2	
ACENAPHTHYLENE		1	2	
ALDRIN		1	2	
ANTIMONY		1	2	
AROCLOR-1248		1	2	
AROCLOR-1260	X	1	2	
BENZO(k)FLUORANTHENE	X	1	2	
BENZOIC ACID	X	3	2	4
BENZYL ALCOHOL		1	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	
BUTYL BENZYL PHTHALATE		1	2	
delta-BHC	X	1	2	
DI-n-OCTYL PHTHALATE		1	2	
DIBENZO(a,h)ANTHRACENE		1	2	
DIBENZOFURAN		1	2	
DIELDRIN		1	2	
ENDOSULFAN SULFATE		1	2	
ENDRIN KETONE		1	2	
gamma-BHC (LINDANE)		1	2	
HEPTACHLOR		1	2	
HEPTACHLOR EPOXIDE		1	2	
ISOPHORONE		1	2	
MERCURY		1	2	
METHOXYCHLOR		1	2	
MOLYBDENUM		1	2	
NITRATE/NITRITE		2	2	
PENTACHLOROPHENOL		1	2	
PHENOL		1	2	
THALLIUM		1	2	
VINYL ACETATE		2	2	

Reason Codes:

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3 = Analyte detected in medium but not included in screen for other reasons
4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU6 Soil Dump Areas Source Area at RFETS

MULE DEER OU6 SOIL DUMP AREAS		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU6	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	
1,1-DICHLOROETHANE		2	2	
1,1-DICHLOROETHENE		2	2	
1,2,4-TRICHLOROBENZENE	X	1	2	
1,2-DICHLOROETHANE	X	2	2	
1,2-DICHLOROETHENE	X	2	2	
2-METHYLNAPHTHALENE	X	1	2	
4,4'-DDT		1	2	
ACENAPHTHYLENE		1	2	
ALDRIN	X	1	2	
ANTIMONY	X	1	2	
AROCLOR-1248		1	2	
AROCLOR-1260	X	1	2	
BENZOIC ACID	X	1	2	
BENZYL ALCOHOL	X	1	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	
CHLOROFORM	X	2	2	
delta-BHC		1	2	
DIBENZOFURAN	X	3	2	4
DIELDRIN		1	2	
ENDOSULFAN SULFATE		1	2	
ENDRIN KETONE		1	2	
gamma-BHC (LINDANE)	X	1	2	
HEPTACHLOR	X	1	2	
HEPTACHLOR EPOXIDE		1	2	
ISOPHORONE		1	2	
METHOXYCHLOR		1	2	
SILVER	X	1	2	
TRICHLOROETHENE	X	2	2	
VINYL ACETATE		2	2	

Reason Codes:

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3 = Analyte detected in medium but not included in screen for other reasons
4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU5 Ash Pits Source Area at RFETS

MULE DEER OU5 ASH PITS		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU5	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	1	
1,1-DICHLOROETHANE		2	1	
1,1-DICHLOROETHENE		2	1	
1,2,4-TRICHLOROBENZENE		2	1	
1,2-DICHLOROETHENE		2	1	
2-BUTANONE		2	1	
2-METHYLNAPHTHALENE	X	2	1	
4,4'-DDT	X	2	1	
4-METHYL-2-PENTANONE		2	1	
ACENAPHTHENE	X	1	1	
ACENAPHTHYLENE	X	1	1	
ALDRIN	X	2	1	
ANTHRACENE	X	1	1	
AROCLOR-1248		2	1	
AROCLOR-1254	X	2	1	
AROCLOR-1260		2	1	
BENZENE		2	1	
BENZO(a)ANTHRACENE	X	2	1	
BENZO(a)PYRENE	X	1	1	
BENZO(b)FLUORANTHENE	X	1	1	
BENZO(ghi)PERYLENE	X	1	1	
BENZO(k)FLUORANTHENE	X	2	1	
BENZOIC ACID	X	2	1	
BENZYL ALCOHOL		2	1	
BIS(2-CHLOROISOPROPYL)ETHER		2	1	
BUTYL BENZYL PHTHALATE	X	2	1	
CHLOROFORM		2	1	
CHRYSENE	X	1	1	
delta-BHC		2	1	
DI-n-BUTYL PHTHALATE	X	2	1	
DI-n-OCTYL PHTHALATE	X	2	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	
DIBENZOFURAN	X	2	1	
DIELDRIN	X	2	1	
ENDOSULFAN SULFATE	X	2	1	
ENDRIN KETONE	X	2	1	
FLUORANTHENE	X	1	1	
FLUORENE	X	1	1	
gamma-BHC (LINDANE)		2	1	
HEPTACHLOR		2	1	
HEPTACHLOR EPOXIDE	X	2	1	
INDENO(1,2,3-cd)PYRENE	X	1	1	
ISOPHORONE	X	2	1	
METHOXYCHLOR	X	2	1	
NAPHTHALENE	X	1	1	
PENTACHLOROPHENOL	X	2	1	
PHENANTHRENE	X	1	1	
PHENOL	X	2	1	
PYRENE	X	1	1	
TETRACHLOROETHENE		2	1	
TOLUENE	X	2	1	
TOTAL XYLENES		2	1	
TRICHLOROETHENE		2	1	
VINYL ACETATE		2	1	

Reason Codes:

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2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU5 Old Landfill Source Area at RFETS

MULE DEER OU5 OLD LANDFILL		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU5	Surficial Soil	Surface Water	TRV
1,1-DICHLOROETHANE		1	1	
1,1-DICHLOROETHENE		1	1	
1,2,4-TRICHLOROBENZENE		1	1	
1,2-DICHLOROETHANE		1	1	
1,2-DICHLOROETHENE		1	1	
ACENAPHTHYLENE	X	3	1	4
AROCLOR-1248		1	1	
BENZENE		1	1	
BENZOIC ACID	X	3	1	4
BENZYL ALCOHOL		1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	
delta-BHC		1	1	
DIBENZOFURAN	X	3	1	4
gamma-BHC (LINDANE)		1	1	
HEPTACHLOR		1	1	
VINYL ACETATE		1	1	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU6 A-Ponds Source Area at RFETS

MULE DEER OU6 A-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU6	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	1	
1,1-DICHLOROETHANE		2	1	
1,1-DICHLOROETHENE		2	1	
1,2,4-TRICHLOROBENZENE	X	1	1	
1,2-DICHLOROETHANE	X	2	1	
1,2-DICHLOROETHENE	X	2	1	
2-BUTANONE	X	2	1	
2-METHYLNAPHTHALENE	X	1	1	
4-METHYL-2-PENTANONE	X	2	1	
ACENAPHTHENE	X	1	1	
ACENAPHTHYLENE		1	1	
ALDRIN	X	1	2	
ANTHRACENE	X	1	1	
AROCLOR-1248		1	2	
AROCLOR-1254	X	1	2	
AROCLOR-1260	X	1	2	
BENZENE	X	2	1	
BENZO(a)ANTHRACENE	X	1	1	
BENZO(a)PYRENE	X	1	1	
BENZO(b)FLUORANTHENE	X	1	1	
BENZO(ghi)PERYLENE	X	1	1	
BENZO(k)FLUORANTHENE	X	1	1	
BENZOIC ACID	X	3	1	4
BENZYL ALCOHOL	X	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	
BIS(2-ETHYLHEXYL)PHTHALATE	X	1	1	
BUTYL BENZYL PHTHALATE	X	1	1	
CHLOROFORM	X	2	1	
CHRYSENE	X	1	1	
DI-n-OCTYL PHTHALATE	X	1	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	
DIBENZOFURAN	X	1	1	
DIELDRIN		1	2	
ENDOSULFAN SULFATE		1	2	
ENDRIN KETONE		1	2	
FLUORANTHENE	X	1	1	
FLUORENE	X	1	1	
gamma-BHC (LINDANE)	X	1	2	
HEPTACHLOR	X	1	2	
HEPTACHLOR EPOXIDE		1	2	
INDENO(1,2,3-cd)PYRENE	X	1	1	
ISOPHORONE		1	1	
METHOXYCHLOR		1	2	
NAPHTHALENE	X	1	1	
NITRATE/NITRITE		2	2	
PENTACHLOROPHENOL		1	1	
PHENANTHRENE	X	1	1	
PHENOL	X	1	1	
PYRENE	X	1	1	
TETRACHLOROETHENE	X	2	1	
THALLIUM		1	1	
TOTAL XYLENES		2	1	
TRICHLOROETHENE	X	2	1	
VINYL ACETATE		2	1	

Reason Codes:

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2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU11 West Spray Field Source Area at RFETS

MULE DEER OU11 WEST SPRAY FIELD		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU11	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	
1,1-DICHLOROETHANE		2	2	
1,1-DICHLOROETHENE		2	2	
1,2,4-TRICHLOROBENZENE		2	2	
1,2-DICHLOROETHANE		2	2	
1,2-DICHLOROETHENE		2	2	
2-METHYLNAPHTHALENE		2	2	
4,4'-DDT		2	2	
4-METHYL-2-PENTANONE		2	2	
ACENAPHTHENE		2	2	
ACENAPHTHYLENE		2	2	
ALDRIN		2	2	
ANTHRACENE		2	2	
AROCLOR-1248		2	2	
AROCLOR-1254		2	2	
AROCLOR-1260		2	2	
BENZENE		2	2	
BENZO(a)ANTHRACENE		2	2	
BENZO(a)PYRENE		2	2	
BENZO(b)FLUORANTHENE		2	2	
BENZO(ghi)PERYLENE		2	2	
BENZO(k)FLUORANTHENE		2	2	
BENZOIC ACID		2	2	
BENZYL ALCOHOL		2	2	
BIS(2-CHLOROISOPROPYL)ETHER		2	2	
BUTYL BENZYL PHTHALATE		2	2	
CHRYSENE		2	2	
delta-BHC		2	2	
DI-n-OCTYL PHTHALATE		2	2	
DIBENZO(a,h)ANTHRACENE		2	2	
DIBENZOFURAN		2	2	
DIELDRIN		2	2	
ENDOSULFAN SULFATE		2	2	
ENDRIN KETONE		2	2	
FLUORANTHENE		2	2	
FLUORENE		2	2	
gamma-BHC (LINDANE)		2	2	
HEPTACHLOR		2	2	
HEPTACHLOR EPOXIDE		2	2	
INDENO(1,2,3-cd)PYRENE		2	2	
ISOPHORONE		2	2	
MERCURY		1	2	
METHOXYCHLOR		2	2	
NAPHTHALENE		2	2	
PENTACHLOROPHENOL		2	2	
PHENANTHRENE		2	2	
PHENOL		2	2	
PYRENE		2	2	
SILVER		1	2	
TETRACHLOROETHENE		2	2	
TOTAL XYLENES		2	2	
VINYL ACETATE		2	2	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU6 B-Ponds Source Area at RFETS

MULE DEER OU6 B-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU6	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	1	
1,1-DICHLOROETHANE		2	1	
1,1-DICHLOROETHENE		2	1	
1,2,4-TRICHLOROBENZENE	X	1	1	
2-BUTANONE	X	2	1	
2-METHYLNAPHTHALENE	X	1	1	
4,4'-DDT		1	2	
4-METHYL-2-PENTANONE	X	2	1	
ACENAPHTHENE	X	1	1	
ACENAPHTHYLENE		1	1	
ALDRIN	X	1	2	
ANTHRACENE	X	1	1	
AROCLOR-1248		1	2	
AROCLOR-1260	X	1	2	
BENZENE	X	2	1	
BENZO(a)ANTHRACENE	X	1	1	
BENZO(a)PYRENE	X	1	1	
BENZO(b)FLUORANTHENE	X	1	1	
BENZO(ghi)PERYLENE	X	1	1	
BENZO(k)FLUORANTHENE	X	1	1	
BENZOIC ACID	X	3	1	4
BENZYL ALCOHOL	X	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	
BIS(2-ETHYLHEXYL)PHTHALATE	X	1	1	
BUTYL BENZYL PHTHALATE	X	1	1	
CHRYSENE	X	1	1	
delta-BHC		1	2	
DI-n-OCTYL PHTHALATE	X	1	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	
DIBENZOFURAN	X	1	1	
DIELDRIN		1	2	
ENDOSULFAN SULFATE		1	2	
ENDRIN KETONE		1	2	
FLUORANTHENE	X	1	1	
FLUORENE	X	1	1	
gamma-BHC (LINDANE)	X	1	2	
HEPTACHLOR	X	1	2	
HEPTACHLOR EPOXIDE		1	2	
INDENO(1,2,3-cd)PYRENE	X	1	1	
ISOPHORONE		1	1	
METHOXYCHLOR		1	2	
METHYLENE CHLORIDE	X	2	1	
NAPHTHALENE	X	1	1	
NITRATE/NITRITE		2	2	
PENTACHLOROPHENOL		1	1	
PHENANTHRENE	X	1	1	
PHENOL	X	1	1	
PYRENE	X	1	1	
TOTAL XYLENES		2	1	
VINYL ACETATE		2	1	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU4 Downgradient Source Area at RFETS

MULE DEER OU4 DOWNGRADIENT		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU4	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	
1,1-DICHLOROETHANE		2	2	
1,1-DICHLOROETHENE		2	2	
1,2,4-TRICHLOROBENZENE		1	2	
1,2-DICHLOROETHANE		2	2	
1,2-DICHLOROETHENE		2	2	
2-BUTANONE		2	2	
2-METHYLNAPHTHALENE		1	2	
4,4'-DDT		1	2	
4-METHYL-2-PENTANONE		2	2	
ACENAPHTHENE		1	2	
ACENAPHTHYLENE		1	2	
ALDRIN		1	2	
ANTHRACENE		1	2	
ANTIMONY		1	2	
AROCLOR-1248		1	2	
AROCLOR-1254	X	1	2	
AROCLOR-1260		1	2	
BENZENE		2	2	
BENZOIC ACID		1	2	
BENZYL ALCOHOL		1	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	
CHLOROFORM		2	2	
delta-BHC		1	2	
DIBENZOFURAN		1	2	
DIELDRIN		1	2	
ENDOSULFAN SULFATE		1	2	
ENDRIN KETONE		1	2	
FLUORENE		1	2	
gamma-BHC (LINDANE)		1	2	
HEPTACHLOR		1	2	
HEPTACHLOR EPOXIDE		1	2	
ISOPHORONE		1	2	
METHOXYCHLOR		1	2	
NAPHTHALENE		1	2	
PENTACHLOROPHENOL		1	2	
PHENOL		1	2	
SILVER	X	1	2	
TOTAL XYLENES		2	2	
TRICHLOROETHENE		2	2	
VINYL ACETATE		2	2	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU6 North Spray Field Source Area at RFETS

MULE DEER OU6 NORTH SPRAY FIELD		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU6	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	
1,1-DICHLOROETHANE		2	2	
1,1-DICHLOROETHENE		2	2	
1,2,4-TRICHLOROBENZENE	X	2	2	
1,2-DICHLOROETHANE	X	2	2	
1,2-DICHLOROETHENE	X	2	2	
2-BUTANONE	X	2	2	
2-METHYLNAPHTHALENE	X	2	2	
4,4'-DDT		2	2	
4-METHYL-2-PENTANONE	X	2	2	
ACENAPHTHENE	X	2	2	
ACENAPHTHYLENE		2	2	
ACETONE	X	2	2	
ALDRIN	X	2	2	
ANTHRACENE	X	2	2	
AROCLOR-1248		2	2	
AROCLOR-1254	X	2	2	
AROCLOR-1260	X	2	2	
BENZENE	X	2	2	
BENZO(a)ANTHRACENE	X	2	2	
BENZO(a)PYRENE	X	2	2	
BENZO(b)FLUORANTHENE	X	2	2	
BENZO(ghi)PERYLENE	X	2	2	
BENZO(k)FLUORANTHENE	X	2	2	
BENZOIC ACID	X	2	2	
BENZYL ALCOHOL	X	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		2	2	
BIS(2-ETHYLHEXYL)PHTHALATE	X	2	2	
BUTYL BENZYL PHTHALATE	X	2	2	
CHLOROFORM	X	2	2	
CHRYSENE	X	2	2	
delta-BHC		2	2	
DI-n-BUTYL PHTHALATE	X	2	2	
DI-n-OCTYL PHTHALATE	X	2	2	
DIBENZO(a,h)ANTHRACENE	X	2	2	
DIBENZOFURAN	X	2	2	
DIELDRIN		2	2	
ENDOSULFAN SULFATE		2	2	
ENDRIN KETONE		2	2	
FLUORANTHENE	X	2	2	
FLUORENE	X	2	2	
gamma-BHC (LINDANE)	X	2	2	
HEPTACHLOR	X	2	2	
HEPTACHLOR EPOXIDE		2	2	
INDENO(1,2,3-cd)PYRENE	X	2	2	
ISOPHORONE		2	2	
METHOXYCHLOR		2	2	
METHYLENE CHLORIDE	X	2	2	
MOLYBDENUM	X	1	2	
NAPHTHALENE	X	2	2	
PENTACHLOROPHENOL		2	2	
PHENANTHRENE	X	2	2	
PHENOL	X	2	2	
PYRENE	X	2	2	
SILVER	X	1	2	

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU6 North Spray Field Source Area at RFETS

MULE DEER OU6 NORTH SPRAY FIELD		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU6	Surficial Soil	Surface Water	TRV
TETRACHLOROETHENE	X	2	2	
TIN		1	2	
TOTAL XYLENES		2	2	
TRICHLOROETHENE	X	2	2	
VINYL ACETATE		2	2	

Reason Codes:

1 = Analyte not detected in medium
2 = Analyte not reported/analyzed in medium
3 = Analyte detected in medium but not included in screen for other reasons
4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU5 C-Ponds Source Area at RFETS

MULE DEER OU5 C-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU5	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	1	
1,1-DICHLOROETHANE		2	1	
1,1-DICHLOROETHENE		2	1	
1,2,4-TRICHLOROBENZENE		1	1	
1,2-DICHLOROETHANE		2	1	
1,2-DICHLOROETHENE		2	1	
2-METHYLNAPHTHALENE	X	1	1	
4,4'-DDT	X	1	1	
4-METHYL-2-PENTANONE		2	1	
ACENAPHTHENE	X	1	1	
ACENAPHTHYLENE	X	1	1	
ALDRIN	X	1	1	
ANTHRACENE	X	1	1	
AROCLOR-1248		1	1	
AROCLOR-1254	X	1	1	
AROCLOR-1260		1	1	
BENZENE		2	1	
BENZO(a)ANTHRACENE	X	1	1	
BENZO(a)PYRENE	X	1	1	
BENZO(b)FLUORANTHENE	X	1	1	
BENZO(ghi)PERYLENE	X	1	1	
BENZO(k)FLUORANTHENE	X	1	1	
BENZOIC ACID	X	3	3	4
BENZYL ALCOHOL		1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	
BUTYL BENZYL PHTHALATE	X	1	1	
CHRYSENE	X	1	1	
delta-BHC		1	1	
DI-n-BUTYL PHTHALATE	X	1	1	
DI-n-OCTYL PHTHALATE	X	1	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	
DIBENZOFURAN	X	1	1	
DIELDRIN	X	1	1	
ENDOSULFAN SULFATE	X	1	1	
ENDRIN KETONE	X	1	1	
FLUORENE	X	1	1	
gamma-BHC (LINDANE)		1	1	
HEPTACHLOR		1	1	
HEPTACHLOR EPOXIDE	X	1	1	
INDENO(1,2,3-cd)PYRENE	X	1	1	
ISOPHORONE	X	1	1	
METHOXYCHLOR	X	1	1	
NAPHTHALENE	X	1	1	
PENTACHLOROPHENOL	X	1	1	
PHENANTHRENE	X	1	1	
PHENOL	X	1	1	
TETRACHLOROETHENE		2	1	
TOTAL XYLENES		2	1	
TRICHLOROETHENE		2	1	
VINYL ACETATE		2	1	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU7 Downgradient Areas Source Area at RFETS

MULE DEER OU7 DOWNGRADIENT AREAS		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU7	Surficial Soil	Surface Water	TRV
1,1-DICHLOROETHANE		2	3	4
1,1-DICHLOROETHENE		2	1	
1,2,4-TRICHLOROBENZENE		2	1	
1,2-DICHLOROETHANE		2	1	
1,2-DICHLOROETHENE		2	1	
2-BUTANONE	X	2	1	
2-METHYLNAPHTHALENE		2	1	
4,4'-DDT		2	1	
ACENAPHTHENE	X	2	1	
ACENAPHTHYLENE		2	1	
ACETONE	X	2	3	4
ALDRIN		2	1	
ANTHRACENE	X	2	1	
ANTIMONY	X	2	3	4
AROCLOR-1248		1	1	
AROCLOR-1254		1	1	
AROCLOR-1260		1	1	
BENZENE		2	3	4
BENZO(a)PYRENE	X	2	1	
BENZO(b)FLUORANTHENE	X	2	1	
BENZO(ghi)PERYLENE	X	2	1	
BENZO(k)FLUORANTHENE	X	2	1	
BENZOIC ACID	X	2	1	
BENZYL ALCOHOL		2	1	
BIS(2-CHLOROISOPROPYL)ETHER	X	2	1	
CHLOROFORM		2	1	
COBALT	X	2	1	
delta-BHC		2	1	
DI-n-BUTYL PHTHALATE	X	2	1	
DI-n-OCTYL PHTHALATE		2	1	
DIBENZO(a,h)ANTHRACENE		2	1	
DIBENZOFURAN		2	1	
DIELDRIN		2	1	
ENDOSULFAN SULFATE		2	1	
ENDRIN KETONE		2	1	
FLUORENE	X	2	1	
gamma-BHC (LINDANE)		2	1	
HEPTACHLOR		2	1	
HEPTACHLOR EPOXIDE		2	1	
INDENO(1,2,3-cd)PYRENE	X	2	1	
ISOPHORONE		2	1	
MERCURY		2	3	4
METHOXYCHLOR		2	1	
METHYLENE CHLORIDE	X	2	3	4
NAPHTHALENE		2	1	
PENTACHLOROPHENOL		2	1	
PHENOL		2	1	
SILVER		2	1	
TETRACHLOROETHENE		2	1	
THALLIUM	X	2	1	
TRICHLOROETHENE		2	1	
VINYL ACETATE	X	2	1	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU6 Burial Trenches Source Area at RFETS

MULE DEER OU6 BURIAL TRENCHES		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU6	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	
1,1-DICHLOROETHANE		2	2	
1,1-DICHLOROETHENE		2	2	
1,2,4-TRICHLOROBENZENE	X	2	2	
1,2-DICHLOROETHANE	X	2	2	
1,2-DICHLOROETHENE	X	2	2	
2-METHYLNAPHTHALENE	X	2	2	
4,4'-DDT		2	2	
ACENAPHTHENE	X	2	2	
ACENAPHTHYLENE		2	2	
ALDRIN	X	2	2	
ANTHRACENE	X	2	2	
ANTIMONY	X	2	2	
AROCLOR-1248		2	2	
AROCLOR-1254	X	2	2	
AROCLOR-1260	X	2	2	
BENZO(a)ANTHRACENE	X	2	2	
BENZO(a)PYRENE	X	2	2	
BENZO(b)FLUORANTHENE	X	2	2	
BENZO(ghi)PERYLENE	X	2	2	
BENZO(k)FLUORANTHENE	X	2	2	
BENZOIC ACID	X	2	2	
BENZYL ALCOHOL	X	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		2	2	
BIS(2-ETHYLHEXYL)PHTHALATE	X	2	2	
BUTYL BENZYL PHTHALATE	X	2	2	
CHRYSENE	X	2	2	
COBALT	X	2	2	
delta-BHC		2	2	
DI-n-BUTYL PHTHALATE	X	2	2	
DI-n-OCTYL PHTHALATE	X	2	2	
DIBENZO(a,h)ANTHRACENE	X	2	2	
DIBENZOFURAN	X	2	2	
DIELDRIN		2	2	
ENDOSULFAN SULFATE		2	2	
ENDRIN KETONE		2	2	
FLUORANTHENE	X	2	2	
FLUORENE	X	2	2	
gamma-BHC (LINDANE)	X	2	2	
HEPTACHLOR	X	2	2	
HEPTACHLOR EPOXIDE		2	2	
INDENO(1,2,3-cd)PYRENE	X	2	2	
ISOPHORONE		2	2	
METHOXYCHLOR		2	2	
NAPHTHALENE	X	2	2	
NITRATE/NITRITE		2	2	
PENTACHLOROPHENOL		2	2	
PHENANTHRENE	X	2	2	
PHENOL	X	2	2	
PYRENE	X	2	2	
SILVER	X	2	2	
TETRACHLOROETHENE	X	2	2	
THALLIUM		2	2	
TOTAL XYLENES		2	2	
VINYL ACETATE		2	2	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU2 Mound Area Source Area at RFETS

MULE DEER OU2 MOUND AREA		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU2	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	
1,1-DICHLOROETHANE		2	2	
1,1-DICHLOROETHENE		2	2	
1,2,4-TRICHLOROBENZENE		1	2	
1,2-DICHLOROETHANE		2	2	
1,2-DICHLOROETHENE		2	2	
2-METHYLNAPHTHALENE		1	2	
4,4'-DDT	X	1	2	
ACENAPHTHENE		1	2	
ACENAPHTHYLENE		1	2	
ALDRIN		1	2	
ANTHRACENE		1	2	
ANTIMONY		2	2	
AROCLOR-1248		1	2	
BENZO(k)FLUORANTHENE	X	1	2	
BENZOIC ACID	X	3	2	4
BENZYL ALCOHOL		1	2	
BERYLLIUM		1	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	
BUTYL BENZYL PHTHALATE		1	2	
CADMIUM		1	2	
delta-BHC	X	1	2	
DI-n-OCTYL PHTHALATE		1	2	
DIBENZO(a,h)ANTHRACENE		1	2	
DIBENZOFURAN		1	2	
DIELDRIN		1	2	
ENDOSULFAN SULFATE		1	2	
ENDRIN KETONE		1	2	
FLUORENE		1	2	
gamma-BHC (LINDANE)		1	2	
HEPTACHLOR		1	2	
HEPTACHLOR EPOXIDE		1	2	
ISOPHORONE		1	2	
MERCURY		1	2	
METHOXYCHLOR		1	2	
MOLYBDENUM		1	2	
NAPHTHALENE		1	2	
NITRATE/NITRITE		2	2	
PENTACHLOROPHENOL		1	2	
PHENOL		1	2	
SELENIUM		1	2	
SILVER		1	2	
TIN		1	2	
TOTAL XYLENES		2	2	
VINYL ACETATE		2	2	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU5 Surface Disturbance Source Area at RFETS

MULE DEER OU5 SURFACE DISTURBANCE		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU5	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	
1,1-DICHLOROETHANE		2	2	
1,1-DICHLOROETHENE		2	2	
1,2,4-TRICHLOROBENZENE		1	2	
1,2-DICHLOROETHANE		2	2	
1,2-DICHLOROETHENE		2	2	
2-BUTANONE		2	2	
2-METHYLNAPHTHALENE	X	1	2	
4,4'-DDT	X	1	2	
4-METHYL-2-PENTANONE		2	2	
ACENAPHTHENE	X	1	2	
ACENAPHTHYLENE	X	1	2	
ACETONE		2	2	
ALDRIN	X	1	2	
ANTHRACENE	X	1	2	
ANTIMONY	X	1	2	
AROCLOR-1248		1	2	
AROCLOR-1254	X	1	2	
AROCLOR-1260		1	2	
BENZENE		2	2	
BENZO(a)ANTHRACENE	X	1	2	
BENZO(a)PYRENE	X	1	2	
BENZO(b)FLUORANTHENE	X	1	2	
BENZO(ghi)PERYLENE	X	1	2	
BENZO(k)FLUORANTHENE	X	1	2	
BENZOIC ACID	X	1	2	
BENZYL ALCOHOL		1	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	
BIS(2-ETHYLHEXYL)PHTHALATE	X	1	2	
BUTYL BENZYL PHTHALATE	X	1	2	
CADMIUM		1	2	
CHLOROFORM		2	2	
CHRYSENE	X	1	2	
delta-BHC		1	2	
DI-n-BUTYL PHTHALATE	X	1	2	
DI-n-OCTYL PHTHALATE	X	1	2	
DIBENZO(a,h)ANTHRACENE	X	1	2	
DIBENZOFURAN	X	1	2	
DIELDRIN	X	1	2	
ENDOSULFAN SULFATE	X	1	2	
ENDRIN KETONE	X	1	2	
FLUORANTHENE	X	1	2	
FLUORENE	X	1	2	
gamma-BHC (LINDANE)		1	2	
HEPTACHLOR		1	2	
HEPTACHLOR EPOXIDE	X	1	2	
INDENO(1,2,3-cd)PYRENE	X	1	2	
ISOPHORONE	X	1	2	
METHOXYCHLOR	X	1	2	
METHYLENE CHLORIDE	X	2	2	
MOLYBDENUM		1	2	
NAPHTHALENE	X	1	2	
NITRATE/NITRITE		2	2	
PENTACHLOROPHENOL	X	1	2	
PHENANTHRENE	X	1	2	

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU5 Surface Disturbance Source Area at RFETS

MULE DEER OU5 SURFACE DISTURBANCE		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU5	Surficial Soil	Surface Water	TRV
PHENOL	X	1	2	
PYRENE	X	1	2	
SELENIUM		1	2	
SILVER	X	1	2	
TETRACHLOROETHENE		2	2	
THALLIUM		1	2	
TIN		1	2	
TOLUENE	X	2	2	
TOTAL XYLENES		2	2	
TRICHLOROETHENE		2	2	
VINYL ACETATE		2	2	

Reason Codes:

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2 = Analyte not reported/analyzed in medium
3 = Analyte detected in medium but not included in screen for other reasons
4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU10 Outside Closures Source Area at RFETS

MULE DEER OU10 OUTSIDE CLOSURES		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU10	Surficial Soil	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	
1,1-DICHLOROETHANE		2	2	
1,1-DICHLOROETHENE		2	2	
1,2,4-TRICHLOROBENZENE		2	2	
1,2-DICHLOROETHANE		2	2	
1,2-DICHLOROETHENE		2	2	
2-BUTANONE		2	2	
2-METHYLNAPHTHALENE		2	2	
4,4'-DDT		2	2	
4-METHYL-2-PENTANONE		2	2	
ACENAPHTHENE		2	2	
ACENAPHTHYLENE		2	2	
ACETONE		2	2	
ALDRIN		2	2	
ALUMINUM		2	2	
ANTHRACENE		2	2	
ANTIMONY		2	2	
AROCLOR-1248		2	2	
AROCLOR-1254		2	2	
AROCLOR-1260		2	2	
ARSENIC		2	2	
BARIUM		2	2	
BENZENE		2	2	
BENZO(a)ANTHRACENE		2	2	
BENZO(a)PYRENE		2	2	
BENZO(b)FLUORANTHENE		2	2	
BENZO(ghi)PERYLENE		2	2	
BENZO(k)FLUORANTHENE		2	2	
BENZOIC ACID		2	2	
BENZYL ALCOHOL		2	2	
BERYLLIUM		2	2	
BIS(2-CHLOROISOPROPYL)ETHER		2	2	
BIS(2-ETHYLHEXYL)PHTHALATE		2	2	
BUTYL BENZYL PHTHALATE		2	2	
CADMIUM		2	2	
CHLOROFORM		2	2	
CHROMIUM		2	2	
CHRYSENE		2	2	
COBALT		2	2	
COPPER		2	2	
delta-BHC		2	2	
DI-n-BUTYL PHTHALATE		2	2	
DI-n-OCTYL PHTHALATE		2	2	
DIBENZO(a,h)ANTHRACENE		2	2	
DIBENZOFURAN		2	2	
DIELDRIN		2	2	
ENDOSULFAN SULFATE		2	2	
ENDRIN KETONE		2	2	
FLUORANTHENE		2	2	
FLUORENE		2	2	
gamma-BHC (LINDANE)		2	2	
HEPTACHLOR		2	2	
HEPTACHLOR EPOXIDE		2	2	
INDENO(1,2,3-cd)PYRENE		2	2	
ISOPHORONE		2	2	

Analytes not Included in the Wildlife Ecological Screen for Mule Deer in the OU10 Outside Closures Source Area at RFETS

MULE DEER OU10 OUTSIDE CLOSURES		Unable to estimate risk to wildlife for the following reasons: REASON CODE		
Analyte	PCOC in OU10	Surficial Soil	Surface Water	TRV
LEAD		2	2	
LITHIUM		2	2	
MAGNESIUM		2	2	
MANGANESE		2	2	
MERCURY		2	2	
METHOXYCHLOR		2	2	
METHYLENE CHLORIDE		2	2	
MOLYBDENUM		2	2	
NAPHTHALENE		2	2	
NICKEL		2	2	
NITRATE/NITRITE		2	2	
PENTACHLOROPHENOL		2	2	
PHENANTHRENE		2	2	
PHENOL		2	2	
PYRENE		2	2	
SELENIUM		2	2	
SILVER		2	2	
STRONTIUM		2	2	
TETRACHLOROETHENE		2	2	
THALLIUM		2	2	
TIN		2	2	
TOLUENE		2	2	
TOTAL XYLENES		2	2	
TRICHLOROETHENE		2	2	
VANADIUM		2	2	
VINYL ACETATE		2	2	
ZINC		2	2	

Note: No data exists for OU10 Outside Closures, therefore, all analytes are listed above.

Reason Codes:

1 = Analyte not detected in medium
2 = Analyte not reported/analyzed in medium
3 = Analyte detected in medium but not included in screen for other reasons
4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU6 B-Ponds Source Area at RFETS

RED-TAILED HAWK OU6 B-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU6	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	1	1	
1,1-DICHLOROETHANE		2	1	1	
1,1-DICHLOROETHENE		2	1	1	
1,2,4-TRICHLOROBENZENE	X	1	3	1	4
1,2-DICHLOROETHANE	X	2	1	3	4
1,2-DICHLOROETHENE	X	2	1	3	4
2-BUTANONE	X	2	3	1	4
2-METHYLNAPHTHALENE	X	1	3	1	4
4,4'-DDT		1	1	2	
4-METHYL-2-PENTANONE	X	2	1	1	
ACENAPHTHENE	X	1	3	1	4
ACENAPHTHYLENE		1	1	1	
ACETONE	X	2	3	3	4
ALDRIN	X	1	1	2	
ANTHRACENE	X	1	3	1	4
ANTIMONY	X	1	3	3	4
AROCLOR-1248		1	3	2	4
AROCLOR-1254	X	1	3	2	4
AROCLOR-1260	X	1	3	2	4
BENZENE	X	2	1	1	
BENZO(a)ANTHRACENE	X	1	3	1	4
BENZO(a)PYRENE	X	1	3	1	4
BENZO(b)FLUORANTHENE	X	1	3	1	4
BENZO(ghi)PERYLENE	X	1	3	1	4
BENZO(k)FLUORANTHENE	X	1	3	1	4
BENZOIC ACID	X	3	1	1	4
BENZYL ALCOHOL	X	1	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
BIS(2-ETHYLHEXYL)PHTHALATE	X	1	3	1	4
BUTYL BENZYL PHTHALATE	X	1	3	1	4
CADMIUM		1	3	3	4
CHLOROFORM	X	2	1	3	4
CHRYSENE	X	1	3	1	4
delta-BHC		1	1	2	
DI-n-BUTYL PHTHALATE	X	1	1	3	4
DI-n-OCTYL PHTHALATE	X	1	3	1	4
DIBENZO(a,h)ANTHRACENE	X	1	3	1	4
DIBENZOFURAN	X	1	3	1	4
DIELDRIN		1	1	2	
ENDOSULFAN SULFATE		1	1	2	
ENDRIN KETONE		1	1	2	
FLUORANTHENE	X	1	3	1	4
FLUORENE	X	1	3	1	4
gamma-BHC (LINDANE)	X	1	3	2	4
HEPTACHLOR	X	1	3	2	4
HEPTACHLOR EPOXIDE		1	1	2	
INDENO(1,2,3-cd)PYRENE	X	1	3	1	4
ISOPHORONE		1	1	1	
METHOXYCHLOR		1	1	2	
METHYLENE CHLORIDE	X	2	3	1	4
MOLYBDENUM	X	1	1	3	4
NAPHTHALENE	X	1	3	1	4
NITRATE/NITRITE		2	2	2	
PENTACHLOROPHENOL		1	1	1	
PHENANTHRENE	X	1	3	1	4
PHENOL	X	1	3	1	4
PYRENE	X	1	3	1	4

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU6 B-Ponds Source Area at RFETS

RED-TAILED HAWK OU6 B-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU6	Surficial Soil	Sediment	Surface Water	TRV
TETRACHLOROETHENE	X	2	1	3	4
TOLUENE	X	2	3	1	4
TOTAL XYLENES		2	1	1	
TRICHLOROETHENE	X	2	1	3	4
VINYL ACETATE		2	1	1	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU6 A-Ponds Source Area at RFETS

RED-TAILED HAWK OU6 A-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU6	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	1	1	
1,1-DICHLOROETHANE		2	1	1	
1,1-DICHLOROETHENE		2	1	1	
1,2,4-TRICHLOROBENZENE	X	1	1	1	
1,2-DICHLOROETHANE	X	2	1	1	
1,2-DICHLOROETHENE	X	2	1	1	
2-BUTANONE	X	2	3	1	4
2-METHYLNAPHTHALENE	X	1	1	1	
4-METHYL-2-PENTANONE	X	2	3	1	4
ACENAPHTHENE	X	1	3	1	4
ACENAPHTHYLENE		1	1	1	
ACETONE	X	2	3	1	4
ALDRIN	X	1	3	2	4
ANTHRACENE	X	1	3	1	4
ANTIMONY	X	1	3	3	4
AROCLOR-1248		1	1	2	
AROCLOR-1254	X	1	3	2	4
AROCLOR-1260	X	1	1	2	
BENZENE	X	2	3	1	4
BENZO(a)ANTHRACENE	X	1	3	1	4
BENZO(a)PYRENE	X	1	3	1	4
BENZO(b)FLUORANTHENE	X	1	3	1	4
BENZO(ghi)PERYLENE	X	1	3	1	4
BENZO(k)FLUORANTHENE	X	1	3	1	4
BENZOIC ACID	X	3	3	1	4
BENZYL ALCOHOL	X	1	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
BIS(2-ETHYLHEXYL)PHTHALATE	X	1	3	1	4
BUTYL BENZYL PHTHALATE	X	1	1	1	
CHLOROFORM	X	2	1	1	
CHRYSENE	X	1	3	1	4
DI-n-BUTYL PHTHALATE	X	1	1	3	4
DI-n-OCTYL PHTHALATE	X	1	3	1	4
DIBENZO(a,h)ANTHRACENE	X	1	1	1	
DIBENZOFURAN	X	1	1	1	
DIELDRIN		1	1	2	
ENDOSULFAN SULFATE		1	1	2	
ENDRIN KETONE		1	1	2	
FLUORANTHENE	X	1	3	1	4
FLUORENE	X	1	1	1	
gamma-BHC (LINDANE)	X	1	1	2	
HEPTACHLOR	X	1	1	2	
HEPTACHLOR EPOXIDE		1	1	2	
INDENO(1,2,3-cd)PYRENE	X	1	3	1	4
ISOPHORONE		1	1	1	
MERCURY	X	1	3	3	4
METHOXYCHLOR		1	1	2	
METHYLENE CHLORIDE	X	2	1	3	4
NAPHTHALENE	X	1	1	1	
NITRATE/NITRITE		2	2	2	
PENTACHLOROPHENOL		1	1	1	
PHENANTHRENE	X	1	3	1	4
PHENOL	X	1	3	1	4
PYRENE	X	1	3	1	4
SELENIUM		1	3	3	4

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU6 A-Ponds Source Area at RFETS

RED-TAILED HAWK OU6 A-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU6	Surficial Soil	Sediment	Surface Water	TRV
TETRACHLOROETHENE	X	2	1	1	
THALLIUM		1	3	1	4
TOLUENE	X	2	3	1	4
TOTAL XYLENES		2	1	1	
TRICHLOROETHENE	X	2	1	1	
VINYL ACETATE		2	1	1	

Reason Codes:

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2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU6 Soil Dump Areas Source Area at RFETS

RED-TAILED HAWK OU6 SOIL DUMP AREAS		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU6	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	2	
1,1-DICHLOROETHANE		2	2	2	
1,1-DICHLOROETHENE		2	2	2	
1,2,4-TRICHLOROBENZENE	X	1	2	2	
1,2-DICHLOROETHANE	X	2	2	2	
1,2-DICHLOROETHENE	X	2	2	2	
2-BUTANONE	X	2	2	2	
2-METHYLNAPHTHALENE	X	1	2	2	
4,4'-DDT		1	2	2	
4-METHYL-2-PENTANONE	X	2	2	2	
ACENAPHTHYLENE		1	2	2	
ACETONE	X	2	2	2	
ALDRIN	X	1	2	2	
ANTIMONY	X	1	2	2	
AROCLOR-1248		1	2	2	
AROCLOR-1260	X	1	2	2	
BENZENE	X	2	2	2	
BENZOIC ACID	X	1	2	2	
BENZYL ALCOHOL	X	1	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	2	
CHLOROFORM	X	2	2	2	
delta-BHC		1	2	2	
DIBENZOFURAN	X	3	2	2	4
DIELDRIN		1	2	2	
ENDOSULFAN SULFATE		1	2	2	
ENDRIN KETONE		1	2	2	
gamma-BHC (LINDANE)	X	1	2	2	
HEPTACHLOR	X	1	2	2	
HEPTACHLOR EPOXIDE		1	2	2	
ISOPHORONE		1	2	2	
METHOXYCHLOR		1	2	2	
METHYLENE CHLORIDE	X	2	2	2	
MOLYBDENUM	X	1	2	2	
PENTACHLOROPHENOL		1	2	2	
PHENOL	X	1	2	2	
SELENIUM		1	2	2	
SILVER	X	1	2	2	
TETRACHLOROETHENE	X	2	2	2	
TOLUENE	X	2	2	2	
TOTAL XYLENES		2	2	2	
TRICHLOROETHENE	X	2	2	2	
VINYL ACETATE		2	2	2	

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3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU2 East Trenches Source Area at RFETS

RED-TAILED HAWK OU2 EAST TRENCHES		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU2	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	2	
1,1-DICHLOROETHANE		2	2	2	
1,1-DICHLOROETHENE		2	2	2	
1,2,4-TRICHLOROBENZENE		1	2	2	
1,2-DICHLOROETHANE		2	2	2	
1,2-DICHLOROETHENE		2	2	2	
2-BUTANONE		2	2	2	
2-METHYLNAPHTHALENE		1	2	2	
4,4'-DDT	X	1	2	2	
4-METHYL-2-PENTANONE		2	2	2	
ACENAPHTHENE		1	2	2	
ACENAPHTHYLENE		1	2	2	
ACETONE		2	2	2	
ALDRIN		1	2	2	
ANTHRACENE		1	2	2	
ANTIMONY		1	2	2	
AROCLOR-1248		1	2	2	
AROCLOR-1254	X	1	2	2	
AROCLOR-1260	X	1	2	2	
BENZENE		2	2	2	
BENZO(ghi)PERYLENE	X	1	2	2	
BENZO(k)FLUORANTHENE	X	1	2	2	
BENZOIC ACID	X	3	2	2	4
BENZYL ALCOHOL		1	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	2	
BUTYL BENZYL PHTHALATE		1	2	2	
CHLOROFORM		2	2	2	
delta-BHC	X	1	2	2	
DI-n-BUTYL PHTHALATE	X	1	2	2	
DI-n-OCTYL PHTHALATE		1	2	2	
DIBENZO(a,h)ANTHRACENE		1	2	2	
DIBENZOFURAN		1	2	2	
DIELDRIN		1	2	2	
ENDOSULFAN SULFATE		1	2	2	
ENDRIN KETONE		1	2	2	
FLUORENE		1	2	2	
gamma-BHC (LINDANE)		1	2	2	
HEPTACHLOR		1	2	2	
HEPTACHLOR EPOXIDE		1	2	2	
INDENO(1,2,3-cd)PYRENE	X	1	2	2	
ISOPHORONE		1	2	2	
MERCURY		1	2	2	
METHOXYCHLOR		1	2	2	
METHYLENE CHLORIDE		2	2	2	
MOLYBDENUM		1	2	2	
NAPHTHALENE		1	2	2	
NITRATE/NITRITE		2	2	2	
PENTACHLOROPHENOL		1	2	2	
PHENOL		1	2	2	
TETRACHLOROETHENE		2	2	2	
THALLIUM		1	2	2	
TOLUENE		2	2	2	
TOTAL XYLENES		2	2	2	
TRICHLOROETHENE		2	2	2	
VINYL ACETATE		2	2	2	

Reason Codes:

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4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU2 903 Pad Source Area at RFETS

RED-TAILED HAWK OU2 903 PAD		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU2	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	1	1	
1,1-DICHLOROETHANE		2	1	1	
1,1-DICHLOROETHENE		2	1	1	
1,2,4-TRICHLOROBENZENE		1	1	1	
1,2-DICHLOROETHANE		2	1	1	
1,2-DICHLOROETHENE		2	1	3	4
2-BUTANONE		2	3	1	4
2-METHYLNAPHTHALENE		1	1	1	
4,4'-DDT	X	1	3	1	4
4-METHYL-2-PENTANONE		2	3	1	4
ACENAPHTHYLENE		1	1	1	
ACETONE		2	3	3	4
ALDRIN		1	1	1	
ANTIMONY		3	3	3	4
AROCLOR-1260	X	1	1	1	
BENZENE		2	1	1	
BENZOIC ACID	X	3	1	3	4
BENZYL ALCOHOL		1	1	3	4
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
BUTYL BENZYL PHTHALATE		1	1	1	
CHLOROFORM		2	1	3	4
delta-BHC	X	1	1	1	
DI-n-OCTYL PHTHALATE		1	3	1	4
DIBENZOFURAN		3	1	1	4
DIELDRIN		1	1	1	
ENDOSULFAN SULFATE		1	1	1	
ENDRIN KETONE		1	1	1	
gamma-BHC (LINDANE)		1	3	1	4
HEPTACHLOR		1	1	1	
HEPTACHLOR EPOXIDE		1	1	1	
ISOPHORONE		1	1	1	
METHOXYCHLOR		1	1	1	
METHYLENE CHLORIDE		2	3	3	4
NAPHTHALENE		1	1	1	
PENTACHLOROPHENOL		1	1	1	
PHENOL		1	1	1	
SILVER		1	3	3	4
TETRACHLOROETHENE		2	1	3	4
TOLUENE		2	3	1	4
TOTAL XYLENES		2	1	1	
TRICHLOROETHENE		2	1	3	4
VINYL ACETATE		2	1	1	

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4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU1 881 Hillside Source Area at RFETS

RED-TAILED HAWK OU1 881 HILLSIDE		Unable to estimate risk to wildlife for the following reasons: REASON CODE:			
Analyte	PCOC for OU1	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE	X	2	1	3	4
1,1-DICHLOROETHANE	X	2	1	3	4
1,1-DICHLOROETHENE	X	2	1	3	4
1,2,4-TRICHLOROBENZENE		1	1	1	
1,2-DICHLOROETHANE	X	2	1	3	4
1,2-DICHLOROETHENE	X	2	1	3	4
2-BUTANONE		2	3	3	4
2-METHYLNAPHTHALENE		1	1	1	
4,4'-DDT		1	1	1	
4-METHYL-2-PENTANONE		2	1	1	
ACENAPHTHYLENE	X	3	1	1	4
ACETONE		2	3	3	4
ALDRIN		1	1	3	4
ANTIMONY		1	1	3	4
AROCLOR-1260		1	1	1	
BENZENE		2	1	1	
BENZOIC ACID		1	1	1	
BENZYL ALCOHOL		3	1	1	4
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
BIS(2-ETHYLHEXYL)PHTHALATE		1	3	3	4
BUTYL BENZYL PHTHALATE		1	1	1	
CHLOROFORM		2	1	1	
delta-BHC		1	1	1	
DI-n-BUTYL PHTHALATE		1	1	1	
DI-n-OCTYL PHTHALATE		1	1	1	
DIBENZOFURAN		3	1	1	4
DIELDRIN		1	1	1	
ENDOSULFAN SULFATE		1	1	1	
ENDRIN KETONE		1	1	1	
gamma-BHC (LINDANE)		1	1	1	
HEPTACHLOR		1	1	1	
HEPTACHLOR EPOXIDE		1	1	1	
ISOPHORONE		1	1	1	
METHOXYCHLOR		1	1	1	
METHYLENE CHLORIDE		2	1	3	4
PENTACHLOROPHENOL		1	1	1	
PHENOL		1	1	1	
SILVER		1	1	3	4
TETRACHLOROETHENE	X	2	1	3	4
TOLUENE	X	2	3	3	4
TOTAL XYLENES	X	2	1	3	4
TRICHLOROETHENE	X	2	1	3	4
VINYL ACETATE		2	1	1	

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4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU5 Old Landfill Source Area at RFETS

RED-TAILED HAWK OU5 OLD LANDFILL		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU5	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		1	1	1	
1,1-DICHLOROETHANE		1	1	1	
1,1-DICHLOROETHENE		1	1	1	
1,2,4-TRICHLOROBENZENE		1	1	1	
1,2-DICHLOROETHANE		1	1	1	
1,2-DICHLOROETHENE		1	1	1	
2-BUTANONE		1	1	3	4
4-METHYL-2-PENTANONE		1	1	1	
ACENAPHTHYLENE	X	3	1	1	4
ACETONE		1	3	3	4
ANTIMONY	X	3	3	3	4
AROCLOR-1248		1	1	1	
AROCLOR-1260		1	1	1	
BENZENE		1	1	1	
BENZOIC ACID	X	3	1	1	4
BENZYL ALCOHOL		1	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
CHLOROFORM		1	1	3	4
delta-BHC		1	1	1	
DIBENZOFURAN	X	3	1	1	4
ENDOSULFAN SULFATE	X	3	1	1	4
ENDRIN KETONE	X	3	1	1	4
gamma-BHC (LINDANE)		1	1	1	
HEPTACHLOR		1	1	1	
ISOPHORONE	X	1	1	1	
METHOXYCHLOR	X	3	1	1	4
METHYLENE CHLORIDE	X	1	1	3	4
NITRATE/NITRITE		2	3	3	4
PENTACHLOROPHENOL	X	1	1	3	4
PHENOL	X	1	1	1	
TETRACHLOROETHENE		1	3	1	4
TOLUENE	X	1	1	1	
TOTAL XYLENES		1	1	1	
TRICHLOROETHENE		1	1	3	4
VINYL ACETATE		1	1	1	

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3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU11 West Spray Field Source Area at RFETS

RED-TAILED HAWK OU11 WEST SPRAY FIELD		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU11	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	2	
1,1-DICHLOROETHANE		2	2	2	
1,1-DICHLOROETHENE		2	2	2	
1,2,4-TRICHLOROBENZENE		2	2	2	
1,2-DICHLOROETHANE		2	2	2	
1,2-DICHLOROETHENE		2	2	2	
2-BUTANONE		2	2	2	
2-METHYLNAPHTHALENE		2	2	2	
4,4'-DDT		2	2	2	
4-METHYL-2-PENTANONE		2	2	2	
ACENAPHTHENE		2	2	2	
ACENAPHTHYLENE		2	2	2	
ACETONE		2	2	2	
ALDRIN		2	2	2	
ANTHRACENE		2	2	2	
ANTIMONY		3	2	2	4
AROCLOR-1248		2	2	2	
AROCLOR-1254		2	2	2	
AROCLOR-1260		2	2	2	
BENZENE		2	2	2	
BENZO(a)ANTHRACENE		2	2	2	
BENZO(a)PYRENE		2	2	2	
BENZO(b)FLUORANTHENE		2	2	2	
BENZO(ghi)PERYLENE		2	2	2	
BENZO(k)FLUORANTHENE		2	2	2	
BENZOIC ACID		2	2	2	
BENZYL ALCOHOL		2	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		2	2	2	
BIS(2-ETHYLHEXYL)PHTHALATE		2	2	2	
BUTYL BENZYL PHTHALATE		2	2	2	
CHLOROFORM		2	2	2	
CHRYSENE		2	2	2	
delta-BHC		2	2	2	
DI-n-BUTYL PHTHALATE		2	2	2	
DI-n-OCTYL PHTHALATE		2	2	2	
DIBENZO(a,h)ANTHRACENE		2	2	2	
DIBENZOFURAN		2	2	2	
DIELDRIN		2	2	2	
ENDOSULFAN SULFATE		2	2	2	
ENDRIN KETONE		2	2	2	
FLUORANTHENE		2	2	2	
FLUORENE		2	2	2	
gamma-BHC (LINDANE)		2	2	2	
HEPTACHLOR		2	2	2	
HEPTACHLOR EPOXIDE		2	2	2	
INDENO(1,2,3-cd)PYRENE		2	2	2	
ISOPHORONE		2	2	2	
MERCURY		1	2	2	
METHOXYCHLOR		2	2	2	
METHYLENE CHLORIDE		2	2	2	
NAPHTHALENE		2	2	2	
PENTACHLOROPHENOL		2	2	2	
PHENANTHRENE		2	2	2	
PHENOL		2	2	2	
PYRENE		2	2	2	

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU11 West Spray Field Source Area at RFETS

RED-TAILED HAWK OU11 WEST SPRAY FIELD		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU11	Surficial Soil	Sediment	Surface Water	TRV
SILVER		1	2	2	
TETRACHLOROETHENE		2	2	2	
TOLUENE		2	2	2	
TOTAL XYLENES		2	2	2	
TRICHLOROETHENE		2	2	2	
VINYL ACETATE		2	2	2	

Reason Codes:

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2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU5 Ash Pits Source Area at RFETS

RED-TAILED HAWK OU5 ASH PITS		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU5	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	1	1	
1,1-DICHLOROETHANE		2	1	1	
1,1-DICHLOROETHENE		2	1	1	
1,2,4-TRICHLOROBENZENE		2	1	1	
1,2-DICHLOROETHANE		2	1	3	4
1,2-DICHLOROETHENE		2	1	1	
2-BUTANONE		2	3	1	4
2-METHYLNAPHTHALENE	X	2	1	1	
4,4'-DDT	X	2	1	1	
4-METHYL-2-PENTANONE		2	1	1	
ACENAPHTHENE	X	1	1	1	
ACENAPHTHYLENE	X	1	1	1	
ACETONE		2	3	3	4
ALDRIN	X	2	1	1	
ANTHRACENE	X	1	1	1	
ANTIMONY	X	1	3	3	4
AROCLOR-1248		2	1	1	
AROCLOR-1254	X	2	1	1	
AROCLOR-1260		2	1	1	
BENZENE		2	1	1	
BENZO(a)ANTHRACENE	X	2	1	1	
BENZO(a)PYRENE	X	1	1	1	
BENZO(b)FLUORANTHENE	X	1	1	1	
BENZO(ghi)PERYLENE	X	1	1	1	
BENZO(k)FLUORANTHENE	X	2	1	1	
BENZOIC ACID	X	2	3	1	4
BENZYL ALCOHOL		2	1	1	
BIS(2-CHLOROISOPROPYL)ETHER		2	1	1	
BIS(2-ETHYLHEXYL)PHTHALATE	X	2	3	3	4
BUTYL BENZYL PHTHALATE	X	2	1	1	
CHLOROFORM		2	3	1	4
CHRYSENE	X	1	1	1	
delta-BHC		2	1	1	
DI-n-BUTYL PHTHALATE	X	2	1	1	
DI-n-OCTYL PHTHALATE	X	2	1	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	1	
DIBENZOFURAN	X	2	1	1	
DIELDRIN	X	2	1	1	
ENDOSULFAN SULFATE	X	2	1	1	
ENDRIN KETONE	X	2	1	1	
FLUORANTHENE	X	1	1	1	
FLUORENE	X	1	1	1	
gamma-BHC (LINDANE)		2	1	1	
HEPTACHLOR		2	1	1	
HEPTACHLOR EPOXIDE	X	2	1	1	
INDENO(1,2,3-cd)PYRENE	X	1	1	1	
ISOPHORONE	X	2	1	1	
METHOXYCHLOR	X	2	1	1	
METHYLENE CHLORIDE	X	2	3	3	4
NAPHTHALENE	X	1	1	1	
NITRATE/NITRITE		2	3	3	4
PENTACHLOROPHENOL	X	2	1	1	
PHENANTHRENE	X	1	1	1	
PHENOL	X	2	1	1	
PYRENE	X	1	1	1	

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU5 Ash Pits Source Area at RFETS

RED-TAILED HAWK OU5 ASH PITS		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU5	Surficial Soil	Sediment	Surface Water	TRV
TETRACHLOROETHENE		2	1	1	
TOLUENE	X	2	1	1	
TOTAL XYLENES		2	1	1	
TRICHLOROETHENE		2	1	1	
VINYL ACETATE		2	1	1	

Reason Codes:

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2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU5 C-Ponds Source Area at RFETS

RED-TAILED HAWK OU5 C-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU5	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	3	1	4
1,1-DICHLOROETHANE		2	1	1	
1,1-DICHLOROETHENE		2	1	1	
1,2,4-TRICHLOROBENZENE		1	1	1	
1,2-DICHLOROETHANE		2	1	1	
1,2-DICHLOROETHENE		2	1	1	
2-BUTANONE		2	3	3	4
2-METHYLNAPHTHALENE	X	1	1	1	
4,4'-DDT	X	1	1	1	
4-METHYL-2-PENTANONE		2	1	1	
ACENAPHTHENE	X	1	1	1	
ACENAPHTHYLENE	X	1	1	1	
ACETONE		2	3	3	4
ALDRIN	X	1	1	1	
ANTHRACENE	X	1	1	1	
ANTIMONY	X	1	1	3	4
AROCLOR-1248		1	1	1	
AROCLOR-1254	X	1	1	1	
AROCLOR-1260		1	1	1	
BENZENE		2	1	1	
BENZO(a)ANTHRACENE	X	1	1	1	
BENZO(a)PYRENE	X	1	1	1	
BENZO(b)FLUORANTHENE	X	1	1	1	
BENZO(ghi)PERYLENE	X	1	1	1	
BENZO(k)FLUORANTHENE	X	1	1	1	
BENZOIC ACID	X	3	3	3	4
BENZYL ALCOHOL		1	1	1	
BERYLLIUM		1	3	3	4
BIS(2-CHLOROISOPROPYL)ETHER		1	1	1	
BIS(2-ETHYLHEXYL)PHTHALATE	X	1	3	3	4
BUTYL BENZYL PHTHALATE	X	1	3	1	4
CHLOROFORM		2	1	3	4
CHRYSENE	X	1	1	1	
delta-BHC		1	3	1	4
DI-n-BUTYL PHTHALATE	X	1	3	1	4
DI-n-OCTYL PHTHALATE	X	1	1	1	
DIBENZO(a,h)ANTHRACENE	X	1	1	1	
DIBENZOFURAN	X	1	1	1	
DIELDRIN	X	1	1	1	
ENDOSULFAN SULFATE	X	1	1	1	
ENDRIN KETONE	X	1	1	1	
FLUORENE	X	1	1	1	
gamma-BHC (LINDANE)		1	1	1	
HEPTACHLOR		1	1	1	
HEPTACHLOR EPOXIDE	X	1	1	1	
INDENO(1,2,3-cd)PYRENE	X	1	1	1	
ISOPHORONE	X	1	1	1	
MERCURY	X	1	3	3	4
METHOXYCHLOR	X	1	1	1	
METHYLENE CHLORIDE	X	2	3	3	4
MOLYBDENUM		1	3	3	4
NAPHTHALENE	X	1	1	1	
NITRATE/NITRITE		2	3	3	4
PENTACHLOROPHENOL	X	1	1	1	
PHENANTHRENE	X	1	1	1	

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU5 C-Ponds Source Area at RFETS

RED-TAILED HAWK OU5 C-PONDS		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU5	Surficial Soil	Sediment	Surface Water	TRV
PHENOL	X	1	3	1	4
SILVER	X	1	3	3	4
TETRACHLOROETHENE		2	1	1	
THALLIUM		1	3	3	4
TOLUENE	X	2	3	3	4
TOTAL XYLENES		2	1	1	
TRICHLOROETHENE		2	1	1	
VINYL ACETATE		2	1	1	

Reason Codes:

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3 = Analyte detected in medium but not included in screen for other reasons

4 = *No toxicity reference value (TRV) available for this analyte*

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU4 Downgradient Source Area at RFETS

RED-TAILED HAWK OU4 DOWNGRADIENT		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU4	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	2	
1,1-DICHLOROETHANE		2	2	2	
1,1-DICHLOROETHENE		2	2	2	
1,2,4-TRICHLOROBENZENE		1	2	2	
1,2-DICHLOROETHANE		2	2	2	
1,2-DICHLOROETHENE		2	2	2	
2-BUTANONE		2	2	2	
2-METHYLNAPHTHALENE		1	2	2	
4,4'-DDT		1	2	2	
4-METHYL-2-PENTANONE		2	2	2	
ACENAPHTHENE		1	2	2	
ACENAPHTHYLENE		1	2	2	
ACETONE		2	2	2	
ALDRIN		1	2	2	
ANTHRACENE		1	2	2	
ANTIMONY		1	2	2	
AROCLOR-1248		1	2	2	
AROCLOR-1254	X	1	2	2	
AROCLOR-1260		1	2	2	
BENZENE		2	2	2	
BENZOIC ACID		1	2	2	
BENZYL ALCOHOL		1	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	2	
CHLOROFORM		2	2	2	
delta-BHC		1	2	2	
DIBENZOFURAN		1	2	2	
DIELDRIN		1	2	2	
ENDOSULFAN SULFATE		1	2	2	
ENDRIN KETONE		1	2	2	
FLUORENE		1	2	2	
gamma-BHC (LINDANE)		1	2	2	
HEPTACHLOR		1	2	2	
HEPTACHLOR EPOXIDE		1	2	2	
ISOPHORONE		1	2	2	
METHOXYCHLOR		1	2	2	
METHYLENE CHLORIDE		2	2	2	
MOLYBDENUM		1	2	2	
NAPHTHALENE		1	2	2	
PENTACHLOROPHENOL		1	2	2	
PHENOL		1	2	2	
SELENIUM		1	2	2	
SILVER	X	1	2	2	
TETRACHLOROETHENE		2	2	2	
TOLUENE		2	2	2	
TOTAL XYLENES		2	2	2	
TRICHLOROETHENE		2	2	2	
VINYL ACETATE		2	2	2	

Reason Codes:

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2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU7 Downgradient Areas Source Area at RFETS

RED-TAILED HAWK OU7 DOWNGRADIENT AREAS		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU7	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	1	1	
1,1-DICHLOROETHANE		2	1	3	4
1,1-DICHLOROETHENE		2	1	1	
1,2,4-TRICHLOROBENZENE		2	1	1	
1,2-DICHLOROETHANE		2	1	1	
1,2-DICHLOROETHENE		2	1	1	
2-BUTANONE	X	2	1	1	
2-METHYLNAPHTHALENE		2	1	1	
4,4'-DDT		2	1	1	
4-METHYL-2-PENTANONE		2	1	1	
ACENAPHTHENE	X	2	1	1	
ACENAPHTHYLENE		2	1	1	
ACETONE	X	2	3	3	4
ALDRIN		2	1	1	
ANTHRACENE	X	2	3	1	4
ANTIMONY	X	2	3	3	4
AROCLOR-1248		1	1	1	
AROCLOR-1254		1	1	1	
AROCLOR-1260		1	1	1	
ARSENIC	X	2	3	3	4
BENZENE		2	1	3	4
BENZO(a)ANTHRACENE	X	2	3	1	4
BENZO(a)PYRENE	X	2	3	1	4
BENZO(b)FLUORANTHENE	X	2	3	1	4
BENZO(ghi)PERYLENE	X	2	3	1	4
BENZO(k)FLUORANTHENE	X	2	3	1	4
BENZOIC ACID	X	2	1	1	
BENZYL ALCOHOL		2	1	1	
BERYLLIUM	X	2	3	1	4
BIS(2-CHLOROISOPROPYL)ETHER	X	2	1	1	
BIS(2-ETHYLHEXYL)PHTHALATE	X	2	3	3	4
BUTYL BENZYL PHTHALATE		2	1	1	
CHLOROFORM		2	1	1	
CHRYSENE	X	2	3	1	4
COBALT	X	2	3	1	4
delta-BHC		2	1	1	
DI-n-BUTYL PHTHALATE	X	2	1	1	
DI-n-OCTYL PHTHALATE		2	1	1	
DIBENZO(a,h)ANTHRACENE		2	1	1	
DIBENZOFURAN		2	1	1	
DIELDRIN		2	1	1	
ENDOSULFAN SULFATE		2	1	1	
ENDRIN KETONE		2	1	1	
FLUORANTHENE	X	2	3	1	4
FLUORENE	X	2	1	1	
gamma-BHC (LINDANE)		2	1	1	
HEPTACHLOR		2	1	1	
HEPTACHLOR EPOXIDE		2	1	1	
INDENO(1,2,3-cd)PYRENE	X	2	3	1	4
ISOPHORONE		2	1	1	
LITHIUM	X	2	3	3	4
METHOXYCHLOR		2	1	1	
METHYLENE CHLORIDE	X	2	1	3	4
MOLYBDENUM	X	2	3	3	4
NAPHTHALENE		2	1	1	

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU7 Downgradient Areas Source Area at RFETS

RED-TAILED HAWK OU7 DOWNGRADIENT AREAS		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU7	Surficial Soil	Sediment	Surface Water	TRV
NICKEL	X	2	3	3	4
PENTACHLOROPHENOL		2	1	1	
PHENANTHRENE	X	2	3	1	4
PHENOL		2	1	1	
PYRENE	X	2	3	1	4
TETRACHLOROETHENE		2	1	1	
THALLIUM	X	2	3	1	4
TOLUENE	X	2	3	3	4
TOTAL XYLENES		2	1	3	4
TRICHLOROETHENE		2	1	1	
VINYL ACETATE	X	2	1	1	

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4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU6 North Spray Field Source Area at RFETS

RED-TAILED HAWK OU6 NORTH SPRAY FIELD		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU6	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	2	
1,1-DICHLOROETHANE		2	2	2	
1,1-DICHLOROETHENE		2	2	2	
1,2,4-TRICHLOROBENZENE	X	2	2	2	
1,2-DICHLOROETHANE	X	2	2	2	
1,2-DICHLOROETHENE	X	2	2	2	
2-BUTANONE	X	2	2	2	
2-METHYLNAPHTHALENE	X	2	2	2	
4,4'-DDT		2	2	2	
4-METHYL-2-PENTANONE	X	2	2	2	
ACENAPHTHENE	X	2	2	2	
ACENAPHTHYLENE		2	2	2	
ACETONE	X	2	2	2	
ALDRIN	X	2	2	2	
ANTHRACENE	X	2	2	2	
ANTIMONY	X	3	2	2	4
AROCLOR-1248		2	2	2	
AROCLOR-1254	X	2	2	2	
AROCLOR-1260	X	2	2	2	
BENZENE	X	2	2	2	
BENZO(a)ANTHRACENE	X	2	2	2	
BENZO(a)PYRENE	X	2	2	2	
BENZO(b)FLUORANTHENE	X	2	2	2	
BENZO(ghi)PERYLENE	X	2	2	2	
BENZO(k)FLUORANTHENE	X	2	2	2	
BENZOIC ACID	X	2	2	2	
BENZYL ALCOHOL	X	2	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		2	2	2	
BIS(2-ETHYLHEXYL)PHTHALATE	X	2	2	2	
BUTYL BENZYL PHTHALATE	X	2	2	2	
CHLOROFORM	X	2	2	2	
CHRYSENE	X	2	2	2	
delta-BHC		2	2	2	
DI-n-BUTYL PHTHALATE	X	2	2	2	
DI-n-OCTYL PHTHALATE	X	2	2	2	
DIBENZO(a,h)ANTHRACENE	X	2	2	2	
DIBENZOFURAN	X	2	2	2	
DIELDRIN		2	2	2	
ENDOSULFAN SULFATE		2	2	2	
ENDRIN KETONE		2	2	2	
FLUORANTHENE	X	2	2	2	
FLUORENE	X	2	2	2	
gamma-BHC (LINDANE)	X	2	2	2	
HEPTACHLOR	X	2	2	2	
HEPTACHLOR EPOXIDE		2	2	2	
INDENO(1,2,3-cd)PYRENE	X	2	2	2	
ISOPHORONE		2	2	2	
METHOXYCHLOR		2	2	2	
METHYLENE CHLORIDE	X	2	2	2	
MOLYBDENUM	X	1	2	2	
NAPHTHALENE	X	2	2	2	
PENTACHLOROPHENOL		2	2	2	
PHENANTHRENE	X	2	2	2	
PHENOL	X	2	2	2	
PYRENE	X	2	2	2	

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU6 North Spray Field Source Area at RFETS

RED-TAILED HAWK OU6 NORTH SPRAY FIELD		Unable to estimate risk to wildlife for the following reasons: REASON CODE:			
Analyte	PCOC for OU6	Surficial Soil	Sediment	Surface Water	TRV
SILVER	X	1	2	2	
TETRACHLOROETHENE	X	2	2	2	
TIN		1	2	2	
TOLUENE	X	2	2	2	
TOTAL XYLENES		2	2	2	
TRICHLOROETHENE	X	2	2	2	
VINYL ACETATE		2	2	2	

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Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU5 Surface Disturbance Source Area at RFETS

RED-TAILED HAWK OU5 SURFACE DISTURBANCE		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU5	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	2	
1,1-DICHLOROETHANE		2	2	2	
1,1-DICHLOROETHENE		2	2	2	
1,2,4-TRICHLOROBENZENE		1	2	2	
1,2-DICHLOROETHANE		2	2	2	
1,2-DICHLOROETHENE		2	2	2	
2-BUTANONE		2	2	2	
2-METHYLNAPHTHALENE	X	1	2	2	
4,4'-DDT	X	1	2	2	
4-METHYL-2-PENTANONE		2	2	2	
ACENAPHTHENE	X	1	2	2	
ACENAPHTHYLENE	X	1	2	2	
ACETONE		2	2	2	
ALDRIN	X	1	2	2	
ANTHRACENE	X	1	2	2	
ANTIMONY	X	1	2	2	
AROCLOR-1248		1	2	2	
AROCLOR-1254	X	1	2	2	
AROCLOR-1260		1	2	2	
BENZENE		2	2	2	
BENZO(a)ANTHRACENE	X	1	2	2	
BENZO(a)PYRENE	X	1	2	2	
BENZO(b)FLUORANTHENE	X	1	2	2	
BENZO(ghi)PERYLENE	X	1	2	2	
BENZO(k)FLUORANTHENE	X	1	2	2	
BENZOIC ACID	X	1	2	2	
BENZYL ALCOHOL		1	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	2	
BIS(2-ETHYLHEXYL)PHTHALATE	X	1	2	2	
BUTYL BENZYL PHTHALATE	X	1	2	2	
CADMIUM		1	2	2	
CHLOROFORM		2	2	2	
CHRYSENE	X	1	2	2	
delta-BHC		1	2	2	
DI-n-BUTYL PHTHALATE	X	1	2	2	
DI-n-OCTYL PHTHALATE	X	1	2	2	
DIBENZO(a,h)ANTHRACENE	X	1	2	2	
DIBENZOFURAN	X	1	2	2	
DIELDRIN	X	1	2	2	
ENDOSULFAN SULFATE	X	1	2	2	
ENDRIN KETONE	X	1	2	2	
FLUORANTHENE	X	1	2	2	
FLUORENE	X	1	2	2	
gamma-BHC (LINDANE)		1	2	2	
HEPTACHLOR		1	2	2	
HEPTACHLOR EPOXIDE	X	1	2	2	
INDENO(1,2,3-cd)PYRENE	X	1	2	2	
ISOPHORONE	X	1	2	2	
METHOXYCHLOR	X	1	2	2	
METHYLENE CHLORIDE	X	2	2	2	
MOLYBDENUM		1	2	2	
NAPHTHALENE	X	1	2	2	
NITRATE/NITRITE		2	2	2	
PENTACHLOROPHENOL	X	1	2	2	
PHENANTHRENE	X	1	2	2	

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU5 Surface Disturbance Source Area at RFETS

RED-TAILED HAWK OU5 SURFACE DISTURBANCE		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU5	Surficial Soil	Sediment	Surface Water	TRV
PHENOL	X	1	2	2	
PYRENE	X	1	2	2	
SELENIUM		1	2	2	
SILVER	X	1	2	2	
TETRACHLOROETHENE		2	2	2	
THALLIUM		1	2	2	
TIN		1	2	2	
TOLUENE	X	2	2	2	
TOTAL XYLENES		2	2	2	
TRICHLOROETHENE		2	2	2	
VINYL ACETATE		2	2	2	

Reason Codes:

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3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU2 Mound Area Source Area at RFETS

RED-TAILED HAWK OU2 MOUND AREA		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU2	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	2	
1,1-DICHLOROETHANE		2	2	2	
1,1-DICHLOROETHENE		2	2	2	
1,2,4-TRICHLOROBENZENE		1	2	2	
1,2-DICHLOROETHANE		2	2	2	
1,2-DICHLOROETHENE		2	2	2	
2-BUTANONE		2	2	2	
2-METHYLNAPHTHALENE		1	2	2	
4,4'-DDT	X	1	2	2	
4-METHYL-2-PENTANONE		2	2	2	
ACENAPHTHENE		1	2	2	
ACENAPHTHYLENE		1	2	2	
ACETONE		2	2	2	
ALDRIN		1	2	2	
ANTHRACENE		1	2	2	
ANTIMONY		2	2	2	
AROCLOR-1248		1	2	2	
BENZENE		2	2	2	
BENZO(k)FLUORANTHENE	X	1	2	2	
BENZOIC ACID	X	3	2	2	4
BENZYL ALCOHOL		1	2	2	
BERYLLIUM		1	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		1	2	2	
BUTYL BENZYL PHTHALATE		1	2	2	
CADMIUM		1	2	2	
CHLOROFORM		2	2	2	
delta-BHC	X	1	2	2	
DI-n-BUTYL PHTHALATE	X	1	2	2	
DI-n-OCTYL PHTHALATE		1	2	2	
DIBENZO(a,h)ANTHRACENE		1	2	2	
DIBENZOFURAN		1	2	2	
DIELDRIN		1	2	2	
ENDOSULFAN SULFATE		1	2	2	
ENDRIN KETONE		1	2	2	
FLUORENE		1	2	2	
gamma-BHC (LINDANE)		1	2	2	
HEPTACHLOR		1	2	2	
HEPTACHLOR EPOXIDE		1	2	2	
ISOPHORONE		1	2	2	
MERCURY		1	2	2	
METHOXYCHLOR		1	2	2	
METHYLENE CHLORIDE		2	2	2	
MOLYBDENUM		1	2	2	
NAPHTHALENE		1	2	2	
NITRATE/NITRITE		2	2	2	
PENTACHLOROPHENOL		1	2	2	
PHENOL		1	2	2	
SELENIUM		1	2	2	
SILVER		1	2	2	
TETRACHLOROETHENE		2	2	2	
TIN		1	2	2	
TOLUENE		2	2	2	
TOTAL XYLENES		2	2	2	
TRICHLOROETHENE		2	2	2	
VINYL ACETATE		2	2	2	

Reason Codes:

1 = Analyte not detected in medium

2 = Analyte not reported/analyzed in medium

3 = Analyte detected in medium but not included in screen for other reasons

4 = No toxicity reference value (TRV) available for this analyte

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU10 Outside Closures Source Area at RFETS

RED-TAILED HAWK: OU10 OUTSIDE CLOSURES:		Unable to estimate risk to wildlife for the following reasons: REASON CODES:			
Analyte:	PCOC for OU10	Surficial Soil	Sediment	Surface Water	TRV
1,1,1-TRICHLOROETHANE		2	2	2	
1,2-DICHLOROETHANE		2	2	2	
2-METHYLNAPHTHALENE		2	2	2	
4,4'-DDT		2	2	2	
ACENAPHTHENE		2	2	2	
ACETONE		2	2	2	
ALDRIN		2	2	2	
ALUMINUM		2	2	2	
ANTHRACENE		2	2	2	
AROCLOR-1248		2	2	2	
AROCLOR-1254		2	2	2	
AROCLOR-1260		2	2	2	
ARSENIC		2	2	2	
BARIUM		2	2	2	
BENZENE		2	2	2	
BENZO(a)ANTHRACENE		2	2	2	
BENZO(a)PYRENE		2	2	2	
BENZO(b)FLUORANTHENE		2	2	2	
BENZO(ghi)PERYLENE		2	2	2	
BENZO(k)FLUORANTHENE		2	2	2	
BERYLLIUM		2	2	2	
BIS(2-ETHYLHEXYL)PHTHALATE		2	2	2	
BUTYL BENZYL PHTHALATE		2	2	2	
CADMIUM		2	2	2	
CHROMIUM		2	2	2	
CHRYSENE		2	2	2	
COBALT		2	2	2	
COPPER		2	2	2	
delta-BHC		2	2	2	
DI-n-BUTYL PHTHALATE		2	2	2	
DI-n-OCTYL PHTHALATE		2	2	2	
DIBENZO(a,h)ANTHRACENE		2	2	2	
DIELDRIN		2	2	2	
FLUORANTHENE		2	2	2	
FLUORENE		2	2	2	
gamma-BHC (LINDANE)		2	2	2	
HEPTACHLOR		2	2	2	
HEPTACHLOR EPOXIDE		2	2	2	
INDENO(1,2,3-cd)PYRENE		2	2	2	
LEAD		2	2	2	
LITHIUM		2	2	2	
MAGNESIUM		2	2	2	
MANGANESE		2	2	2	
MERCURY		2	2	2	
METHYLENE CHLORIDE		2	2	2	
MOLYBDENUM		2	2	2	
NAPHTHALENE		2	2	2	
NICKEL		2	2	2	
NITRATE/NITRITE		2	2	2	
PENTACHLOROPHENOL		2	2	2	
PHENANTHRENE		2	2	2	
PHENOL		2	2	2	
PYRENE		2	2	2	
SELENIUM		2	2	2	
SILVER		2	2	2	

Analytes not Included in the Wildlife Ecological Screen for Red-tailed Hawks in the OU10 Outside Closures Source Area at RFETS

RED-TAILED HAWK OU10 OUTSIDE CLOSURES		Unable to estimate risk to wildlife for the following reasons: REASON CODE			
Analyte	PCOC for OU10	Surficial Soil	Sediment	Surface Water	TRV
STRONTIUM		2	2	2	
TETRACHLOROETHENE		2	2	2	
THALLIUM		2	2	2	
TIN		2	2	2	
TOLUENE		2	2	2	
TOTAL XYLENES		2	2	2	
TRICHLOROETHENE		2	2	2	
VANADIUM		2	2	2	
ZINC		2	2	2	
1,1-DICHLOROETHANE		2	2	2	
1,1-DICHLOROETHENE		2	2	2	
1,2,4-TRICHLOROBENZENE		2	2	2	
1,2-DICHLOROETHENE		2	2	2	
2-BUTANONE		2	2	2	
4-METHYL-2-PENTANONE		2	2	2	
ACENAPHTHYLENE		2	2	2	
ANTIMONY		2	2	2	
BENZOIC ACID		2	2	2	
BENZYL ALCOHOL		2	2	2	
BIS(2-CHLOROISOPROPYL)ETHER		2	2	2	
CHLOROFORM		2	2	2	
DIBENZOFURAN		2	2	2	
ENDOSULFAN SULFATE		2	2	2	
ENDRIN KETONE		2	2	2	
ISOPHORONE		2	2	2	
METHOXYCHLOR		2	2	2	
VINYL ACETATE		2	2	2	

Note: No data exists for OU10 Outside Closures, therefore, all analytes are listed above.

Reason Codes:

1 = Analyte not detected in medium
2 = Analyte not reported/analyzed in medium
3 = Analyte detected in medium but not included in screen for other reasons
4 = No toxicity reference value (TRV) available for this analyte

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Attachment 6
Vegetation, Burrow Air, and Radionuclide Results

Attachment 6
Table 1
Results of Vegetation PCOC Screen—Subsurface Soil

Source Area	Subsurface Soil PCOC	OU PCOC?	Group	Exposure Point Concentration (mg/kg)	Vegetation TRV (mg/kg)	Detection Frequency (%)	Hazard Quotient
			Walnut Creek Watershed				
OU2 903 Pad	Zinc	X	M	59	50	100	1.2
	Strontium		M	61	63	95	1.0
	Vanadium		M	32	36	100	0.89
	Antimony		M	6.1	7.1	7.1	0.86
	Aluminum		M	11,000	15,000	100	0.73
	Chromium	X	M	16	23	100	0.69
	Nickel		M	17	30	91	0.56
	Selenium		M	0.73	1.5	9.3	0.50
	Manganese	X	M	250	500	100	0.50
	Cobalt	X	M	9.1	20	89	0.46
	Arsenic	X	M	4.2	10	95	0.42
	Lead	X	M	15	50	100	0.30
	Barium	X	M	140	500	99	0.28
	Mercury	X	M	0.07	0.30	36	0.23
	Cadmium	X	M	0.7	3.0	12	0.23
	Copper	X	M	17	100	97	0.17
	Silver	X	M	1.1	7.4	1.8	0.15
	Nitrate/Nitrite	X	W	2.2	19	42	0.12
	Tetrachloroethene	X	V	0.11	200	7.2	0.00055
OU2 East Trenches	Strontium		M	59	63	100	0.94
	Zinc	X	M	43	50	99	0.86
	Vanadium		M	27	36	99	0.75
	Aluminum		M	11,000	15,000	100	0.73
	Chromium	X	M	16	23	100	0.70
	Mercury	X	M	0.19	0.30	16	0.62
	Tetrachloroethene	X	V	120	200	21	0.60
	Antimony		M	4.3	7.1	4.7	0.60
	Manganese	X	M	280	500	100	0.56
	Silver	X	M	4.1	7.4	32	0.56
	Arsenic	X	M	5.2	10	90	0.52
	Nickel		M	15	30	99	0.49
	Selenium		M	0.58	1.5	14	0.40
	Cobalt	X	M	6.5	20	97	0.32
	Cadmium	X	M	0.86	3.0	14	0.29
	Lead	X	M	12	50	99	0.24
	Barium	X	M	110	500	100	0.22
	Copper	X	M	15	100	99	0.15
OU4 Downgradient	Nitrate/Nitrite	X	W	91	19	100	4.8
	Lithium		M	7.5	2.0	100	3.7
	Zinc	X	M	69	50	100	1.4
	Lead	X	M	67	50	100	1.3
	Strontium		M	70	63	100	1.1
	Vanadium		M	39	36	100	1.1
	Aluminum		M	12,000	15,000	100	0.80
	Manganese	X	M	340	500	100	0.68
	Nickel		M	20	30	100	0.66

Attachment 6
Table 1
Results of Vegetation PCOC Screen—Subsurface Soil

Source Area	Subsurface Soil PCOC	OU PCOC?	Group	Exposure Point Concentration (mg/kg)	Vegetation TRV (mg/kg)	Detection Frequency (%)	Hazard Quotient
OU6 A Ponds	Lithium		M	6.3	2.0	100	3.2
	Zinc	X	M	50	50	100	1.0
OU2 Mound Area	Antimony		M	11	7.1	36	1.6
	Strontium		M	93	63	100	1.5
	Zinc	X	M	70	50	100	1.4
	Nickel		M	24	30	100	0.81
	Arsenic	X	M	8.0	10	100	0.80
	Manganese	X	M	320	500	100	0.64
	Chromium	X	M	12	23	100	0.51
	Cobalt	X	M	10	20	91	0.49
	Mercury	X	M	0.10	0.30	55	0.33
	Lead	X	M	16	50	100	0.33
	Barium	X	M	130	500	100	0.26
	Cadmium	X	M	0.76	3.0	9.1	0.25
	Copper	X	M	20	100	100	0.20
	Silver	X	M	1.4	7.4	36	0.19
	Tetrachloroethene	X	V	0.034	200	45	0.00017
OU6 North Spray Field	Lithium		M	4.4	2.0	18	2.2
	Antimony		M	10	7.1	17	1.3
	Chromium	X	M	29	23	100	1.2
	Zinc	X	M	50	50	100	1.0
	Vanadium	X	M	30	36	100	0.82
	Aluminum		M	11,000	15,000	100	0.73
	Strontium	X	M	36	63	100	0.58
	Nickel		M	16	30	82	0.55
	Barium	X	M	150	500	100	0.30
OU11 West Spray Field	Lithium		M	5.4	2.0	97	2.7
	Chromium		M	49	23	93	2.1
	Mercury		M	0.5	0.3	6.8	1.6
	Molybdenum		M	16	17	26	1.0
	Vanadium		M	22	36	100	0.60
	Aluminum		M	8,600	15,000	100	0.57
	Manganese		M	210	500	100	0.42
	Zinc		M	18	50	90	0.36
	Nickel		M	10	30	80	0.33
	Cobalt		M	7.4	25	100	0.30
	Strontium		M	16	63	100	0.26
	Silver		M	1.2	7.4	3.8	0.17
OU6 Burial Trenches	Lithium		M	4.9	2.0	6.4	2.4
	Strontium	X	M	96	63	98	1.5
	Antimony		M	7.1	7.1	3.8	1.0
	Barium	X	M	340	500	100	0.68
	Manganese		M	330	500	100	0.66
	Zinc	X	M	30	50	100	0.60
	Chromium	X	M	13	23	98	0.58
	Vanadium	X	M	19	36	100	0.52
	Arsenic		M	4.3	10	100	0.43
	Cobalt		M	7.9	25	89	0.32
	Molybdenum		M	3.4	17	5.7	0.20

Attachment 6
Table 1
Results of Vegetation PCOC Screen—Subsurface Soil

Source Area	Subsurface Soil PCOC	OU PCOC?	Group	Exposure Point Concentration (mg/kg)	Vegetation TRV (mg/kg)	Detection Frequency (%)	Hazard Quotient
OU7 Downgradient Area	Nitrate/Nitrite	X	W	3.200	19	18	168
	Lithium		M	8.0	2.0	100	4.0
	Strontium	X	M	100	63	100	1.6
	Zinc	X	M	74	50	100	1.5
	Manganese	X	M	330	500	100	0.66
	Selenium	X	M	1.0	1.5	79	0.66
	Nickel	X	M	20	30	100	0.68
	Barium	X	M	200	500	100	0.40
	Vanadium		M	26	36	100	0.71
	Arsenic	X	M	4.9	10	100	0.49
	Aluminum	X	M	10,000	15,000	100	0.67
OU6 Soil Dump Areas	Lithium		M	7.9	2.0	27	3.9
	Strontium	X	M	100	63	100	1.6
	Antimony		M	8.3	7.1	3.6	1.2
	Zinc	X	M	51	50	100	1.0
	Vanadium	X	M	26	36	100	0.72
	Aluminum		M	8,200	15,000	100	0.55
	Chromium	X	M	8.9	23	97	0.39
	Nickel		M	11	30	66	0.36
	Barium	X	M	170	500	100	0.34
	Manganese		M	140	500	100	0.28
	Lead	X	M	14	50	100	0.28
Woman Creek Watershed							
OU1 881 Hillside	Lithium		M	10	2.0	60	5.2
	Antimony		M	10	7.1	45	1.5
	Strontium		M	89	63	62	1.4
	Zinc		M	59	50	100	1.2
	Vanadium		M	31	36	100	0.85
	Aluminum		M	12,000	15,000	100	0.80
	Chromium		M	16	23	99	0.69
	Nickel		M	17	30	97	0.55
	Manganese		M	260	500	100	0.52
	Selenium		M	0.69	1.5	17	0.48
	Arsenic		M	4.7	10	93	0.47
	Molybdenum		M	7.5	17	26	0.44
	Barium		M	170	500	100	0.34
	Cobalt		M	7.5	25	67	0.30
	Mercury		M	0.085	0.30	19	0.28
	Cadmium		M	0.62	3.0	8.5	0.21
	Toluene	X	V	38	200	97	0.19

Attachment 6
Table 1
Results of Vegetation PCOC Screen—Subsurface Soil

Source Area	Subsurface Soil PCOC	OU PCOC?	Group	Exposure Point Concentration (mg/kg)	Vegetation TRV (mg/kg)	Detection Frequency (%)	Hazard Quotient
OU5 Ash Pits	Chromium	X	M	180	23	99	7.9
	Lithium		M	10	2.0	88	4.9
	Nickel	X	M	110	30	96	3.7
	Zinc	X	M	150	50	100	3.0
	Silver	X	M	15	7.4	13	2.0
	Antimony	X	M	9.5	7.1	15	1.3
	Lead	X	M	56	50	100	1.1
	Copper	X	M	110	100	100	1.1
	Cadmium	X	M	3.1	3.0	13	1.0
	Vanadium		M	35	36	100	1.0
	Aluminum		M	14,000	15,000	100	0.93
	Strontium		M	44	63	100	0.70
	Manganese		M	310	500	100	0.62
	Cobalt	X	M	11	25	100	0.44
	Arsenic		M	4.1	10	100	0.41
	Beryllium	X	M	3.6	10	76	0.36
	Barium	X	M	170	500	100	0.34
	Mercury		M	0.09	0.30	17	0.30
	Molybdenum	X	M	4.5	17	7.2	0.27
OU5 C-Ponds	Lithium		M	6.7	2.0	100	3.4
	Chromium	X	M	62	23	100	2.7
	Zinc	X	M	55	50	100	1.1
	Strontium		M	61	63	100	0.97
OU5 Old Landfill	Lithium		M	7.3	2.0	79	3.6
	Copper	X	M	260	100	100	2.6
	Zinc	X	M	100	50	100	2.0
	Chromium	X	M	20	23	100	0.89
	Vanadium		M	31	36	100	0.85
	Antimony	X	M	5.9	7.1	8.5	0.83
	Nickel	X	M	23	30	94	0.76
	Lead	X	M	35	50	100	0.71
	Aluminum		M	9,400	15,000	100	0.63
	Strontium		M	38	63	100	0.61
	Mercury		M	0.18	0.30	32	0.60
	Manganese		M	300	500	100	0.60
	Arsenic		M	5.1	10	99	0.51
	Molybdenum	X	M	7.5	17	10	0.45
	Silver	X	M	3.2	7.4	18	0.43
	Cobalt	X	M	8.6	25	95	0.34
	Acenaphthene	X	S	1.6	5.0	23	0.32
	Anthracene	X	S	2.3	10	23	0.23

Attachment 6
Table 1
Results of Vegetation PCOC Screen—Subsurface Soil

Source Area	Subsurface Soil PCOC	OU PCOC?	Group	Exposure Point Concentration (mg/kg)	Vegetation TRV (mg/kg)	Detection Frequency (%)	Hazard Quotient
OU2 903 Pad	Zinc	X	M	59	50	100	1.2
	Strontium		M	61	63	95	0.97
	Vanadium		M	32	36	100	0.89
	Antimony		M	6.1	7.1	7.1	0.86
	Aluminum		M	11,000	15,000	100	0.73
	Chromium	X	M	16	23	100	0.69
	Nickel		M	17	30	91	0.56
	Selenium		M	0.73	1.5	9.3	0.50
	Manganese	X	M	250	500	100	0.50
	Cobalt	X	M	9.1	20	89	0.46
	Arsenic	X	M	4.2	10	95	0.42
	Lead	X	M	15	50	100	0.30
	Barium	X	M	140	500	99	0.28
	Mercury	X	M	0.070	0.30	36	0.23
	Cadmium	X	M	0.7	3.0	12	0.23
	Copper	X	M	17	100	97	0.17
	Silver	X	M	1.1	7.4	1.8	0.15
	Nitrate/Nitrite	X	W	2.2	19	42	0.12
	Tetrachloroethene	X	V	0.11	200	7.2	0.00055
OU2 East Trenches	Strontium		M	59	63	100	0.94
	Zinc	X	M	43	50	99	0.86
	Aluminum		M	11,000	15,000	100	0.73
	Vanadium		M	27	36	99	0.75
	Chromium	X	M	16	23	100	0.70
	Mercury	X	M	0.19	0.30	16	0.62
	Antimony		M	4.3	7.1	4.7	0.60
	Tetrachloroethene	X	V	120	200	21	0.60
	Silver	X	M	4.1	7.4	32	0.56
	Manganese	X	M	280	500	100	0.56
	Arsenic	X	M	5.2	10	90	0.52
	Nickel		M	15	30	99	0.49
	Selenium		M	0.58	1.5	14	0.40
	Cobalt	X	M	6.5	20	97	0.32
	Cadmium	X	M	0.86	3.0	14	0.29
	Lead	X	M	12	50	99	0.24
	Barium	X	M	110	500	100	0.22
	Copper	X	M	15	100	99	0.15

Hazard quotients and hazard indices were rounded to present only two significant figures.
OU - operable unit
PCOC - potential chemical of concern
TRV - toxicity reference value. TRV is either the literature benchmark or background concentration, whichever is larger.
UCL_{95} - 95% upper confidence limit of the true mean (based on a 1-tailed test)
The following source areas were not listed due to lack of subsurface soil data
- OU5 Surface Disturbance Areas
- OU6 B-Ponds
- OU6 Surface Disturbance Areas
- OU7 Landfill
- OU10 Outside Closure Areas

Attachment 6
Table 2
Results of Vegetation PCOC Screen
A-Pond Sediments

Analyte	Group	OU6 PCOC	Detection Frequency	Units	Exposure Point Concentration	Vegetation Toxicity Reference Value	Hazard Quotient
			Pond A-1				
Antimony	M	X	2/5	mg/kg	29	7.7	3.8
Aluminum	M		5/5	mg/kg	13,000	7,000	1.9
Chromium	M	X	5/5	mg/kg	18	9.8	1.9
Strontium	M		5/5	mg/kg	86	50	1.7
Vanadium	M	X	5/5	mg/kg	37	22	1.7
Zinc	M	X	5/5	mg/kg	110	72	1.5
Mercury	M		5/5	mg/kg	0.43	0	1.4
Nickel	M		3/5	mg/kg	25	30	0.84
Cadmium	M		1/5	mg/kg	2.3	3.0	0.77
Lead	M		5/5	mg/kg	38	50	0.76
Arsenic	M		5/5	mg/kg	6.5	10	0.65
Cobalt	M	X	5/5	mg/kg	12	25	0.49
Barium	M		5/5	mg/kg	190	500	0.38
Copper	M	X	5/5	mg/kg	28	100	0.28
Manganese	M	X	5/5	mg/kg	370	1,800	0.20
Beryllium	M		3/5	mg/kg	1.5	10	0.15
Acenaphthene	S	X	1/5	µg/kg	350	5,000	0.070
Anthracene	S	X	2/5	µg/kg	330	10,000	0.033
Aroclor-1254	P	X	10/10	µg/kg	350	40,000	0.0089
Bis(2-ethylhexyl)phthalate	S	X	4/5	µg/kg	360	200,000	0.0018
Di-N-octyl phthalate	S	X	2/5	µg/kg	330	200,000	0.0017
Toluene	V	X	5/5	µg/kg	240	200,000	0.0012
2-Butanone	V	X	4/5	µg/kg	16	NA	NA
4-Methyl-2-pentanone	V	X	1/5	µg/kg	10	NA	NA
Benzo(a)anthracene	S	X	4/5	µg/kg	280	NA	NA
Benzo(a)pyrene	S	X	4/5	µg/kg	300	NA	NA
Benzo(b)fluoranthene	S	X	3/5	µg/kg	370	NA	NA
Benzo(ghi)perylene	S	X	3/5	µg/kg	290	NA	NA
Benzo(k)fluoranthene	S	X	4/5	µg/kg	250	NA	NA
Cesium	M		5/5	mg/kg	4.5	NA	NA
Chrysene	S	X	5/5	µg/kg	320	NA	NA
Fluoranthene	S	X	5/5	µg/kg	740	NA	NA
Indeno(1,2,3-cd)pyrene	S	X	3/5	µg/kg	300	NA	NA
Iron	M	X	5/5	mg/kg	20,000	NA	NA
Magnesium	M	X	5/5	mg/kg	4,200	NA	NA
Phenanthrene	S	X	5/5	µg/kg	500	NA	NA
Pyrene	S	X	5/5	µg/kg	650	NA	NA
						HAZARD INDEX	***18***

Attachment 6
Table 2
Results of Vegetation PCOC Screen
A-Pond Sediments

Analyte	Group	OU6 PCOC	Detection Frequency	Units	Exposure Point Concentration	Vegetation Toxicity Reference Value	Hazard Quotient
			Pond A-2				
Zinc	M	X	5/5	mg/kg	280	72	3.9
Strontium	M		5/5	mg/kg	92	50	1.8
Aluminum	M		5/5	mg/kg	9,800	7,000	1.4
Vanadium	M	X	5/5	mg/kg	30	22	1.4
Chromium	M	X	5/5	mg/kg	10	10	1.0
Lithium	M		5/5	mg/kg	8.0	9	0.93
Nickel	M		3/5	mg/kg	22	30	0.73
Arsenic	M		5/5	mg/kg	6.2	10	0.62
Lead	M		5/5	mg/kg	27	50	0.53
Cobalt	M	X	5/5	mg/kg	10	25	0.42
Barium	M		5/5	mg/kg	160	500	0.33
Manganese	M	X	5/5	mg/kg	420	1,800	0.23
Mercury	M		1/5	mg/kg	0.069	0	0.23
Copper	M	X	5/5	mg/kg	21	100	0.21
Bis(2-ethylhexyl)phthalate	S	X	5/5	µg/kg	5,800	200,000	0.029
Aroclor-1254	P	X	4/9	µg/kg	270	40,000	0.0068
Toluene	V	X	4/5	µg/kg	700	200,000	0.0035
2-Butanone	V	X	2/5	µg/kg	26	NA	NA
Acetone	V	X	2/5	µg/kg	260	NA	NA
Aldrin	P	X	1/5	µg/kg	35	NA	NA
Benzo(a)anthracene	S	X	1/5	µg/kg	58	NA	NA
Benzo(a)pyrene	S	X	1/5	µg/kg	75	NA	NA
Benzoic acid	S	X	4/5	µg/kg	330	NA	NA
Chrysene	S	X	1/5	µg/kg	71	NA	NA
Fluoranthene	S	X	1/5	µg/kg	160	NA	NA
Iron	M	X	5/5	mg/kg	17,000	NA	NA
Magnesium	M	X	5/5	mg/kg	4,100	NA	NA
Phenanthrene	S	X	1/5	µg/kg	120	NA	NA
Pyrene	S	X	3/5	µg/kg	130	NA	NA
						HAZARD INDEX	***14***
			Pond A-3				
Aluminum	M		5/5	mg/kg	27,000	7,000	3.8
Antimony	M	X	1/4	mg/kg	23	7.7	3.0
Chromium	M	X	5/5	mg/kg	28	10	2.8
Vanadium	M	X	5/5	mg/kg	61	22	2.8
Zinc	M	X	5/5	mg/kg	150	72	2.1
Lithium	M		5/5	mg/kg	15	8.7	1.8
Strontium	M		5/5	mg/kg	75	50	1.5
Arsenic	M		5/5	mg/kg	7.7	10	0.77
Nickel	M		3/5	mg/kg	23	30	0.76
Cobalt	M	X	5/5	mg/kg	15	25	0.59
Lead	M		5/5	mg/kg	28	50	0.56
Barium	M		5/5	mg/kg	190	500	0.38
Copper	M	X	5/5	mg/kg	24	100	0.24
Manganese	M	X	5/5	mg/kg	390	1,800	0.22
Bis(2-ethylhexyl)phthalate	S	X	2/5	µg/kg	520	200,000	0.0026

Attachment 6
Table 2
Results of Vegetation PCOC Screen
A-Pond Sediments

Analyte	Group	OU6 PCOC	Detection Frequency	Units	Exposure Point Concentration	Vegetation Toxicity Reference Value	Hazard Quotient
Aroclor-1254	P	X	1/10	µg/kg	45	40,000	0.0011
Toluene	V	X	5/5	µg/kg	58	200,000	0.00029
2-Butanone	V	X	4/5	µg/kg	4.0	NA	NA
Benzo(a)pyrene	S	X	3/5	µg/kg	240	NA	NA
Benzo(b)fluoranthene	S	X	4/5	µg/kg	330	NA	NA
Cesium	M		5/5	mg/kg	4.9	NA	NA
Chrysene	S	X	5/5	µg/kg	230	NA	NA
Fluoranthene	S	X	5/5	µg/kg	500	NA	NA
Iron	M	X	5/5	mg/kg	25,000	NA	NA
Magnesium	M	X	5/5	mg/kg	5,300	NA	NA
Phenanthrene	S	X	4/5	µg/kg	250	NA	NA
Pyrene	S	X	5/5	µg/kg	420	NA	NA
						HAZARD INDEX	***21***
			Pond A-4				
Antimony	M	X	3/4	mg/kg	40	7.7	5.2
Aluminum	M		5/5	mg/kg	20,000	7,000	2.9
Vanadium	M	X	5/5	mg/kg	51	22	2.4
Zinc	M	X	5/5	mg/kg	140	72	1.9
Strontium	M		5/5	mg/kg	96	50	1.9
Chromium	M	X	2/5	mg/kg	16	10	1.6
Selenium	M		1/5	mg/kg	1.4	1.0	1.4
Lithium	M		1/5	mg/kg	9.9	8.7	1.1
Arsenic	M		5/5	mg/kg	9.5	10	0.95
Nickel	M		4/5	mg/kg	26	30	0.85
Cadmium	M		1/5	mg/kg	2.1	3.0	0.71
Lead	M		5/5	mg/kg	32	50	0.63
Cobalt	M	X	5/5	mg/kg	14	25	0.55
Thallium	M		2/5	mg/kg	0.58	1.3	0.46
Barium	M		5/5	mg/kg	180	500	0.37
Copper	M	X	5/5	mg/kg	28	100	0.28
Manganese	M	X	5/5	mg/kg	430	1,800	0.24
Beryllium	M		3/5	mg/kg	0.98	10	0.098
Bis(2-ethylhexyl)phthalate	S	X	2/5	µg/kg	680	200,000	0.0034
Toluene	V	X	3/5	µg/kg	6.6	200,000	0.000033
Benzene	V	X	1/5	µg/kg	3.0	NA	NA
Cesium	M		5/5	mg/kg	5.1	NA	NA
Iron	M	X	5/5	mg/kg	21,000	NA	NA
Magnesium	M	X	5/5	mg/kg	4,700	NA	NA
						HAZARD INDEX	***24***

Attachment 6
Table 2
Results of Vegetation PCOC Screen
A-Pond Sediments

Analyte	Group	OU6 PCOC	Detection Frequency	Units	Exposure Point Concentration	Vegetation Toxicity Reference Value	Hazard Quotient
			Pond A-5				
Vanadium	M	X	5/5	mg/kg	35	22	1.6
Aluminum	M		5/5	mg/kg	11,000	7,000	1.6
Chromium	M	X	5/5	mg/kg	13	10	1.3
Strontium	M		5/5	mg/kg	65	50	1.3
Zinc	M	X	5/5	mg/kg	72	72	1.0
Lithium	M		5/5	mg/kg	8.1	8.7	0.93
Nickel	M		4/5	mg/kg	18	30	0.60
Thallium	M		3/5	mg/kg	0.69	1.3	0.54
Cobalt	M	X	5/5	mg/kg	12	25	0.50
Arsenic	M		5/5	mg/kg	3.9	10	0.39
Lead	M		5/5	mg/kg	19	50	0.38
Barium	M		5/5	mg/kg	160	500	0.33
Copper	M	X	5/5	mg/kg	18	100	0.18
Manganese	M	X	5/5	mg/kg	280	1,800	0.15
Phenol	S	X	1/5	µg/kg	300	20,000	0.015
Bis(2-ethylhexyl)phthalate	S	X	4/5	µg/kg	200	200,000	0.0010
Toluene	V	X	4/5	µg/kg	19	200,000	0.000096
2-Butanone	V	X	4/5	µg/kg	44	NA	NA
Benzoic acid	S	X	4/5	µg/kg	950	NA	NA
Iron	M	X	5/5	mg/kg	16,000	NA	NA
Magnesium	M	X	5/5	mg/kg	3,100	NA	NA
						HAZARD INDEX	***11***

Attachment 6
Table 3
Results of Vegetation PCOC Screen
B-Pond Sediments

Analyte	Group	OU6 PCOC	Detection Frequency	Units	Exposure Point Concentration	Vegetation Toxicity Reference Value	Hazard Quotient
			Pond B-1				
Silver	M	X	7/7	mg/kg	240	2.7	88
Zinc	M	X	7/7	mg/kg	730	72	10
Chromium	M	X	7/7	mg/kg	65	9.8	6.6
Mercury	M		6/7	mg/kg	0.99	0.30	3.3
Lead	M		7/7	mg/kg	120	50	2.4
Strontium	M		7/7	mg/kg	110	50	2.2
Cadmium	M		4/7	mg/kg	6.5	3.0	2.2
Aluminum	M		7/7	mg/kg	10,000	7,000	1.4
Vanadium	M	X	7/7	mg/kg	30	22	1.4
Nickel	M		3/7	mg/kg	31	30	1.0
Beryllium	M		5/7	mg/kg	10	10	1.0
Copper	M	X	7/7	mg/kg	89	100	0.89
Arsenic	M		7/7	mg/kg	7.0	10	0.70
Thallium	M		1/7	mg/kg	0.79	1.3	0.62
Barium	M		7/7	mg/kg	220	500	0.45
Cobalt	M	X	7/7	mg/kg	11	25	0.43
Bis(2-ethylhexyl)phthalate	S	X	7/7	µg/kg	51,000	200,000	0.25
Aroclor-1254	P	X	10/12	µg/kg	10,000	40,000	0.25
Manganese	M	X	7/7	mg/kg	250	1,800	0.14
Acenaphthene	S	X	3/7	µg/kg	460	5,000	0.092
Anthracene	S	X	3/7	µg/kg	460	10,000	0.046
Phenol	S	X	1/7	µg/kg	290	20,000	0.015
Naphthalene	S	X	1/7	µg/kg	390	100,000	0.0039
Toluene	V	X	5/5	µg/kg	780	200,000	0.0039
Dibenzofuran	S	X	1/7	µg/kg	180	50,000	0.0036
1,2,4-Trichlorobenzene	S	X	1/7	µg/kg	130	NA	NA
2-Butanone	V	X	1/5	µg/kg	13	NA	NA
2-Methylnaphthalene	S	X	1/7	µg/kg	170	NA	NA
Acetone	V	X	4/5	µg/kg	330	NA	NA
Aroclor-1248	P		5/12	µg/kg	210	NA	NA
Benzo(a)anthracene	S	X	6/7	µg/kg	940	NA	NA
Benzo(a)pyrene	S	X	5/7	µg/kg	610	NA	NA
Benzo(b)fluoranthene	S	X	5/7	µg/kg	2,100	NA	NA
Benzo(k)fluoranthene	S	X	5/7	µg/kg	780	NA	NA
Cesium	M		5/7	mg/kg	2.8	NA	NA
Chrysene	S	X	6/7	µg/kg	1,500	NA	NA
Dibenzo(ah)anthracene	S	X	1/7	µg/kg	150	NA	NA
Fluoranthene	S	X	7/7	µg/kg	3,000	NA	NA
Fluorene	S	X	2/7	µg/kg	460	NA	NA
Heptachlor	P	X	1/7	µg/kg	19	NA	NA
Indeno(1,2,3-cd)pyrene	S	X	2/7	µg/kg	410	NA	NA
Iron	M	X	7/7	mg/kg	14,000	NA	NA
Magnesium	M	X	7/7	mg/kg	3,700	NA	NA
Methylene chloride	V	X	1/5	µg/kg	9.0	NA	NA
Phenanthrene	S	X	6/7	µg/kg	2,000	NA	NA
Pyrene	S	X	7/7	µg/kg	2,500	NA	NA
						HAZARD INDEX	***124***

Attachment 6
Table 3
Results of Vegetation PCOC Screen
B-Pond Sediments

Analyte	Group	OU6 PCOC	Detection Frequency	Units	Exposure Point Concentration	Vegetation Toxicity Reference Value	Hazard Quotient
			Pond B-2				
Silver	M	X	3/3	mg/kg	140	2.7	51
Strontium	M		3/3	mg/kg	310	50	6.2
Chromium	M	X	4/4	mg/kg	19	9.8	2.0
Zinc	M	X	3/3	mg/kg	130	72	1.7
Mercury	M		2/3	mg/kg	0.48	0.30	1.6
Selenium	M		1/3	mg/kg	1.6	1.0	1.6
Cadmium	M		2/3	mg/kg	4.5	3.0	1.5
Aluminum	M		4/4	mg/kg	7,900	7,000	1.1
Vanadium	M	X	3/3	mg/kg	24	22	1.1
Lead	M		4/4	mg/kg	43	50	0.87
Arsenic	M		3/4	mg/kg	7.7	10	0.77
Nickel	M		1/3	mg/kg	16	30	0.53
Barium	M		4/4	mg/kg	250	500	0.50
Cobalt	M	X	4/4	mg/kg	12	25	0.47
Manganese	M	X	4/4	mg/kg	540	1,800	0.30
Aroclor-1254	P	X	9/10	µg/kg	3,300	40,000	0.080
Bis(2-ethylhexyl)phthalate	S	X	4/4	µg/kg	10,000	200,000	0.052
Toluene	V	X	4/4	µg/kg	130	200,000	0.00065
2-Butanone	V	X	3/4	µg/kg	120	NA	NA
Acetone	V	X	3/4	µg/kg	750	NA	NA
Aroclor-1248	P		4/10	µg/kg	590	NA	NA
Benzo(a)anthracene	S	X	3/4	µg/kg	320	NA	NA
Benzo(a)pyrene	S	X	1/4	µg/kg	480	NA	NA
Benzo(k)fluoranthene	S	X	1/4	µg/kg	500	NA	NA
Chrysene	S	X	2/4	µg/kg	420	NA	NA
Fluoranthene	S	X	3/4	µg/kg	410	NA	NA
Iron	M	X	4/4	mg/kg	18,000	NA	NA
Magnesium	M	X	4/4	mg/kg	5,700	NA	NA
Phenanthrene	S	X	3/4	µg/kg	350	NA	NA
Pyrene	S	X	3/4	µg/kg	390	NA	NA
						HAZARD INDEX	***72***
			Pond B-3				
Silver	M	X	7/7	mg/kg	170	2.7	63
Antimony	M	X	2/3	mg/kg	69	7.7	8.9
Zinc	M	X	7/7	mg/kg	240	72	3.3
Chromium	M	X	7/7	mg/kg	29	9.8	2.9
Aluminum	M		7/7	mg/kg	12,000	7,000	1.8
Strontium	M		7/7	mg/kg	77	50	1.6
Cadmium	M		4/7	mg/kg	4.6	3.0	1.5
Vanadium	M	X	7/7	mg/kg	31	22	1.4
Mercury	M		6/7	mg/kg	0.35	0.30	1.2
Lead	M		7/7	mg/kg	51	50	1.0
Nickel	M		6/7	mg/kg	25	30	0.82
Copper	M	X	7/7	mg/kg	65	100	0.65
Lithium	M		1/7	mg/kg	5.6	8.7	0.64
Selenium	M		1/7	mg/kg	0.58	1.0	0.58
Arsenic	M		7/7	mg/kg	5.8	10	0.58
Cobalt	M	X	7/7	mg/kg	11	25	0.46

Attachment 6
Table 3
Results of Vegetation PCOC Screen
B-Pond Sediments

Analyte	Group	OU6 PCOC	Detection Frequency	Units	Exposure Point Concentration	Vegetation Toxicity Reference Value	Hazard Quotient
Barium	M		7/7	mg/kg	180	500	0.36
Thallium	M		1/7	mg/kg	0.42	1.3	0.33
Beryllium	M		4/7	mg/kg	2.5	10	0.25
Manganese	M	X	7/7	mg/kg	230	18,000	0.13
Aroclor-1254	P	X	10/12	µg/kg	1,400	40,000	0.036
Bis(2-ethylhexyl)phthalate	S	X	7/7	µg/kg	6,300	200,000	0.032
Aroclor-1260	P	X	3/10	µg/kg	400	40,000	0.010
Toluene	V	X	5/5	µg/kg	600	200,000	0.0030
2-Butanone	V	X	2/5	µg/kg	25	NA	NA
Benzo(a)anthracene	S	X	1/7	µg/kg	360	NA	NA
Benzo(a)pyrene	S	X	1/7	µg/kg	360	NA	NA
Benzo(b)fluoranthene	S	X	5/7	µg/kg	500	NA	NA
Cesium	M		3/7	mg/kg	2.5	NA	NA
Chrysene	S	X	2/7	µg/kg	380	NA	NA
Fluoranthene	S	X	6/7	µg/kg	690	NA	NA
Iron	M	X	7/7	mg/kg	17,000	NA	NA
Magnesium	M	X	7/7	mg/kg	3,300	NA	NA
Phenanthrene	S	X	3/7	µg/kg	440	NA	NA
Pyrene	S	X	4/7	µg/kg	690	NA	NA
						HAZARD INDEX	***92***
			Pond B-4				
Silver	M	X	3/8	mg/kg	40	2.7	15
Zinc	M	X	8/8	mg/kg	250	72	3.5
Antimony	M	X	2/4	mg/kg	26	7.7	3.3
Aluminum	M		8/8	mg/kg	13,000	7,000	1.9
Vanadium	M	X	8/8	mg/kg	39	22	1.8
Chromium	M	X	8/8	mg/kg	17	9.8	1.8
Strontium	M		8/8	mg/kg	89	50	1.8
Lead	M		8/8	mg/kg	46	50	0.92
Lithium	M		5/8	mg/kg	7.0	8.7	0.81
Arsenic	M		8/8	mg/kg	7.4	10	0.74
Cadmium	M		5/8	mg/kg	2	3.0	0.68
Nickel	M		7/8	mg/kg	2.1	30	0.67
Mercury	M		3/8	mg/kg	0.13	0.30	0.43
Cobalt	M	X	8/8	mg/kg	10	25	0.41
Thallium	M		3/8	mg/kg	0.50	1.3	0.39
Barium	M		8/8	mg/kg	180	500	0.35
Copper	M	X	8/8	mg/kg	32	100	0.31
Manganese	M	X	8/8	mg/kg	290	1,800	0.16
Beryllium	M		1/8	mg/kg	1.1	10	0.11
Anthracene	S	X	5/8	µg/kg	240	10,000	0.024
Bis(2-ethylhexyl)phthalate	S	X	8/8	µg/kg	3,100	200,000	0.015
Aroclor-1254	P	X	10/13	µg/kg	430	40,000	0.011
Di-N-octyl phthalate	S	X	3/8	µg/kg	280	200,000	0.0014
Toluene	V	X	4/5	µg/kg	230	200,000	0.0011
2-Butanone	V	X	3/5	µg/kg	9.8	NA	NA
Acetone	V	X	1/5	µg/kg	48	NA	NA
Benzo(a)anthracene	S	X	6/8	µg/kg	380	NA	NA
Benzo(a)pyrene	S	X	8/8	µg/kg	480	NA	NA

Attachment 6
Table 3
Results of Vegetation PCOC Screen
B-Pond Sediments

Analyte	Group	OU6 PCOC	Detection Frequency	Units	Exposure Point Concentration	Vegetation Toxicity Reference Value	Hazard Quotient
Benzo(b)fluoranthene	S	X	8/8	µg/kg	1,000	NA	NA
Benzo(ghi)perylene	S	X	2/8	µg/kg	300	NA	NA
Benzo(k)fluoranthene	S	X	8/8	µg/kg	330	NA	NA
Butyl benzyl phthalate	S	X	2/8	µg/kg	310	NA	NA
Cesium	M		7/8	mg/kg	2.9	NA	NA
Chrysene	S	X	8/8	µg/kg	560	NA	NA
Fluoranthene	S	X	8/8	µg/kg	1,200	NA	NA
Gamma-BHC (Lindane)	P	X	1/7	µg/kg	13	NA	NA
Indeno(1,2,3-cd)pyrene	S	X	2/8	µg/kg	310	NA	NA
Iron	M	X	8/8	mg/kg	18,000	NA	NA
Magnesium	M	X	8/8	mg/kg	4,100	NA	NA
Phenanthrene	S	X	8/8	µg/kg	650	NA	NA
Pyrene	S	X	8/8	µg/kg	1,000	NA	NA
						HAZARD INDEX	***35***
			Pond B-5				
Aluminum	M		5/5	mg/kg	19,000	7,000	2.8
Vanadium	M	X	5/5	mg/kg	47	22	2.2
Zinc	M	X	5/5	mg/kg	150	72	2.0
Chromium	M	X	5/5	mg/kg	20	9.8	2.0
Strontium	M		5/5	mg/kg	68	50	1.4
Lithium	M		5/5	mg/kg	11	8.7	1.3
Arsenic	M		5/5	mg/kg	8.3	10	0.83
Nickel	M		5/5	mg/kg	22	30	0.74
Tin	M		1/5	mg/kg	32	50	0.64
Lead	M		5/5	mg/kg	30	50	0.61
Thallium	M		3/5	mg/kg	0.72	1.3	0.57
Cobalt	M	X	5/5	mg/kg	11	25	0.43
Barium	M		5/5	mg/kg	180	500	0.35
Copper	M	X	5/5	mg/kg	26	100	0.26
Manganese	M	X	5/5	mg/kg	310	1,800	0.17
Bis(2-ethylhexyl)phthalate	S	X	2/5	µg/kg	270	200,000	0.0014
Di-N-octyl phthalate	S	X	1/5	µg/kg	240	200,000	0.0012
Toluene	V	X	5/5	µg/kg	37	200,000	0.00019
2-Butanone	V	X	3/5	µg/kg	16	NA	NA
Acetone	V	X	1/5	µg/kg	59	NA	NA
Cesium	M		5/5	mg/kg	3.5	NA	NA
Fluoranthene	S	X	2/5	µg/kg	190	NA	NA
Iron	M	X	5/5	mg/kg	20,000	NA	NA
Magnesium	M	X	5/5	mg/kg	4,500	NA	NA
Pyrene	S	X	1/5	µg/kg	160	NA	NA
						HAZARD INDEX	***16***

Attachment 6
Table 4
Results of Vegetation PCOC Screen
North Walnut Creek and South Walnut Creek Stream Sediments

Analyte	Group	OU6 PCOC	Detection Frequency	Units	Exposure Point Concentration	Vegetation Toxicity Reference Value	Hazard Quotient
			North Walnut Creek				
Antimony	M		2/5	mg/kg	22	7.7	2.9
Zinc	M	X	11/11	mg/kg	96	72	1.3
Vanadium	M	X	11/11	mg/kg	27	22	1.3
Aluminum	M		11/11	mg/kg	8,300	7,000	1.2
Strontium	M	X	11/11	mg/kg	56	50	1.1
Lithium	M		9/11	mg/kg	7.3	8.7	0.84
Chromium	M		11/11	mg/kg	8.2	9.8	0.84
Lead	M		11/11	mg/kg	36	50	0.71
Nickel	M		9/11	mg/kg	14	30	0.48
Arsenic	M	X	10/11	mg/kg	4.1	10	0.41
Cobalt	M	X	11/11	mg/kg	9.8	25	0.39
Selenium	M		2/9	mg/kg	0.39	1.0	0.39
Thallium	M		3/11	mg/kg	0.46	1.3	0.36
Cadmium	M		2/11	mg/kg	0.91	3.0	0.30
Manganese	M	X	11/11	mg/kg	530	1,800	0.30
Mercury	M		3/11	mg/kg	0.077	0.30	0.26
Barium	M	X	11/11	mg/kg	130	500	0.26
Copper	M		9/11	mg/kg	16	100	0.16
Beryllium	M		6/11	mg/kg	0.71	10	0.071
Anthracene	S	X	1/11	µg/kg	230	10,000	0.023
Bis(2-ethylhexyl)phthalate	S	X	4/11	µg/kg	230	200,000	0.0011
Di-n-butyl phthalate	S	X	2/11	µg/kg	230	200,000	0.0011
Acetone	V	X	1/10	µg/kg	51	NA	NA
Benzo(a)anthracene	S	X	2/11	µg/kg	220	NA	NA
Benzo(a)pyrene	S	X	3/11	µg/kg	210	NA	NA
Benzo(b)fluoranthene	S	X	2/11	µg/kg	220	NA	NA
Benzo(k)fluoranthene	S	X	1/11	µg/kg	230	NA	NA
Benzoic acid	S	X	4/11	µg/kg	970	NA	NA
Benzyl alcohol	S	X	1/11	µg/kg	240	NA	NA
Butyl benzyl phthalate	S	X	1/11	µg/kg	230	NA	NA
Chrysene	S	X	3/11	µg/kg	220	NA	NA
Fluoranthene	S	X	5/11	µg/kg	240	NA	NA
Indeno(1,2,3-cd)pyrene	S	X	1/11	µg/kg	230	NA	NA
Iron	M	X	11/11	mg/kg	16,000	NA	NA
Magnesium	M	X	11/11	mg/kg	2,900	NA	NA
Methylene chloride	V	X	1/10	µg/kg	14	NA	NA
Phenanthrene	S	X	3/11	µg/kg	230	NA	NA
Pyrene	S	X	3/11	µg/kg	240	NA	NA
						HAZARD INDEX	***14***

Attachment 6
Table 4
Results of Vegetation PCOC Screen
North Walnut Creek and South Walnut Creek Stream Sediments

Analyte	Group	OU6 PCOC	Detection Frequency	Units	Exposure Point Concentration	Vegetation Toxicity Reference Value	Hazard Quotient
South Walnut Creek (no metals analysis)							
Acenaphthene	S	X	1/12	µg/kg	270	5,000	0.055
Anthracene	S	X	1/12	µg/kg	280	10,000	0.028
Aroclor-1254	P		7/12	µg/kg	430	40,000	0.011
Naphthalene	S	X	1/12	µg/kg	270	100,000	0.0027
Di-N-butyl phthalate	S	X	5/12	µg/kg	240	200,000	0.0012
Bis(2-ethylhexyl)phthalate	S	X	5/12	µg/kg	210	200,000	0.0010
Tetrachloroethene	V		4/13	µg/kg	6.6	200,000	0.000033
Trichloroethene	V		1/13	µg/kg	3.9	200,000	0.000019
Acetone	V	X	3/13	µg/kg	62	NA	NA
Benzo(a)anthracene	S	X	4/12	µg/kg	270	NA	NA
Benzo(a)pyrene	S	X	2/12	µg/kg	300	NA	NA
Benzo(b)fluoranthene	S	X	3/12	µg/kg	320	NA	NA
Benzo(ghi)perylene	S	X	1/12	µg/kg	280	NA	NA
Benzo(k)fluoranthene	S	X	3/12	µg/kg	270	NA	NA
Benzoic acid	S	X	1/11	µg/kg	1,400	NA	NA
Chloroform	V		1/13	µg/kg	4.1	NA	NA
Chrysene	S	X	4/12	µg/kg	290	NA	NA
Fluoranthene	S	X	6/12	µg/kg	370	NA	NA
Indeno(1,2,3-cd)pyrene	S	X	3/12	µg/kg	260	NA	NA
Methylene chloride	V	X	4/13	µg/kg	17	NA	NA
Phenanthrene	S	X	6/12	µg/kg	310	NA	NA
Pyrene	S	X	6/12	µg/kg	350	NA	NA
						HAZARD INDEX	***0.098***

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Table 5
Results of Vegetation PCOC Screen
C-Pond Sediments

Analyte	Group	OU5 PCOC	Detection Frequency	Units	Exposure Point Concentration	Vegetation Toxicity Reference Value	Hazard Quotient
			Pond C-1				
Mercury	M	X	3/3	mg/kg	1.8	0.30	6.0
Aluminum	M		3/3	mg/kg	16,000	7,000	2.2
Chromium	M		3/3	mg/kg	20	9.8	2.0
Lithium	M		3/3	mg/kg	16	8.7	1.8
Vanadium	M		3/3	mg/kg	36	22	1.7
Selenium	M		2/2	mg/kg	1.5	1.0	1.5
Strontium	M		3/3	mg/kg	74	50	1.5
Zinc	M	X	3/3	mg/kg	110	72	1.5
Nickel	M		3/3	mg/kg	19	30	0.64
Lead	M		3/3	mg/kg	31	50	0.61
Arsenic	M		3/3	mg/kg	5.6	10	0.56
Barium	M		3/3	mg/kg	260	500	0.52
Cobalt	M		3/3	mg/kg	12	25	0.49
Copper	M		3/3	mg/kg	27	100	0.27
Manganese	M		3/3	mg/kg	310	1,800	0.17
Beryllium	M		3/3	mg/kg	1.0	10	0.10
Di-N-butyl phthalate	S	X	1/2	µg/kg	3,000	200,000	0.015
Toluene	V	X	3/3	µg/kg	560	200,000	0.0028
Benzoic acid	S	X	3/3	µg/kg	630	NA	NA
Iron	M		3/3	mg/kg	24,000	NA	NA
Magnesium	M		3/3	mg/kg	4,300	NA	NA
						HAZARD INDEX	***22***
			Pond C-2				
Strontium	M		3/3	mg/kg	170	50	3.3
Zinc	M	X	3/3	mg/kg	200	72	2.8
Mercury	M	X	3/3	mg/kg	0.68	0.30	2.3
Vanadium	M		3/3	mg/kg	41	22	1.9
Chromium	M		3/3	mg/kg	18	9.8	1.8
Aluminum	M		3/3	mg/kg	12,000	7,000	1.8
Lithium	M		3/3	mg/kg	9.7	8.7	1.1
Arsenic	M		3/3	mg/kg	9.8	10	0.98
Lead	M		3/3	mg/kg	35	50	0.69
Nickel	M		3/3	mg/kg	18	30	0.60
Cobalt	M		3/3	mg/kg	12	25	0.48
Barium	M		3/3	mg/kg	270	500	0.45
Copper	M		3/3	mg/kg	36	100	0.36
Manganese	M		3/3	mg/kg	600	1,800	0.33
Phenol	S	X	1/2	µg/kg	3,400	20,000	0.17
Beryllium	M		1/2	mg/kg	0.67	10	0.067
Toluene	V	X	3/3	µg/kg	430	200,000	0.0022
Benzoic acid	S	X	1/2	µg/kg	18,000	NA	NA
Fluoranthene	S	X	1/2	µg/kg	3,500	NA	NA
Iron	M		3/3	mg/kg	20,000	NA	NA
Magnesium	M		3/3	mg/kg	4,000	NA	NA
						HAZARD INDEX	***19***

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Table 6
Results of Vegetation PCOC Screen
Woman Creek Watershed Stream Sediments

Analyte	Group	OU5 PCOC	Detection Frequency	Units	Exposure Point Concentration	Vegetation Toxicity Reference Value	Hazard Quotient
Zinc	M	X	45/45	mg/kg	120	72	1.6
Antimony	M		5/41	mg/kg	11	7.7	1.5
Aluminum	M		45/45	mg/kg	9,500	7,000	1.4
Selenium	M		21/43	mg/kg	1.2	1.0	1.2
Vanadium	M		45/45	mg/kg	26	22	1.2
Chromium	M		41/45	mg/kg	10	9.8	1.0
Lithium	M		39/44	mg/kg	7.7	8.7	0.89
Strontium	M		44/45	mg/kg	44	50	0.88
Silver	M		3/42	mg/kg	2.4	2.7	0.88
Thallium	M		8/44	mg/kg	0.70	1.3	0.55
Lead	M		45/45	mg/kg	26	50	0.53
Arsenic	M		44/45	mg/kg	4.4	10	0.44
Nickel	M		35/45	mg/kg	12	30	0.40
Molybdenum	M		13/43	mg/kg	4.0	11	0.37
Cobalt	M		44/45	mg/kg	7.5	25	0.30
Manganese	M		45/45	mg/kg	460	1,800	0.26
Cadmium	M		9/42	mg/kg	0.75	3.0	0.25
Barium	M		45/45	mg/kg	120	500	0.25
Tin	M		16/43	mg/kg	10	50	0.20
Mercury	M	X	1/43	mg/kg	0.060	0.30	0.20
Copper	M	X	39/45	mg/kg	15	100	0.15
Beryllium	M		25/45	mg/kg	0.70	10	0.070
4-Methylphenol	S		3/30	µg/kg	400	20,000	0.020
Aroclor-1254	P		1/33	µg/kg	360	40,000	0.0090
Bis(2-ethylhexyl)phthalate	S		17/31	µg/kg	480	200,000	0.0024
Toluene	V		3/34	µg/kg	10	200,000	0.000052
Tetrachloroethene	V		1/34	µg/kg	4.8	200,000	0.000024
1,1,1-Trichloroethane	V		1/34	µg/kg	4.8	200,000	0.000024
2-Butanone	V		5/33	µg/kg	61	NA	NA
Acetone	V		11/34	µg/kg	250	NA	NA
Benzo(a)anthracene	S		1/30	µg/kg	400	NA	NA
Benzoic acid	S		2/32	µg/kg	1,900	NA	NA
Butyl benzyl phthalate	S		1/30	µg/kg	400	NA	NA
Cesium	M		2/45	mg/kg	4.1	NA	NA
Chloroform	V		1/34	µg/kg	4.8	NA	NA
Chrysene	S		1/30	µg/kg	400	NA	NA
delta-BHC	P		1/33	µg/kg	18	NA	NA
Fluoranthene	S		2/30	µg/kg	400	NA	NA
Heptachlor	P		1/33	µg/kg	18	NA	NA
Iron	M		45/45	mg/kg	14,000	NA	NA
Magnesium	M		45/45	mg/kg	2,200	NA	NA
Methylene chloride	V		6/35	µg/kg	18	NA	NA
Phenanthrene	S		2/30	µg/kg	400	NA	NA
Pyrene	S		2/30	µg/kg	400	NA	NA
Silicon	M		25/25	mg/kg	630	NA	NA
						HAZARD INDEX	*15*

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Table 7
Subsurface Soil PCOCs Without Vegetation TRVs

Analyte	Group	PCOC	Detection Frequency	Exposure Point Concentration	Units
881 Hillside					
2-Butanone	V		12/304	4.5	mg/kg
2-Chloroethyl vinyl ether	V		0/170	ND	
2-Methylnaphthalene	S	X	0/181	ND	
4,4'-DDT	P		0/201	ND	
3-Methyl-2-pentanone	V		5/362	3.7	mg/kg
4-Nitroaniline	S		0/164	ND	
Acenaphthylene	S		0/181	ND	
Acetone	V		82/342	5.1	mg/kg
Benzene	V		0/405	ND	
Benzo(a)anthracene	S	X	4/181	0.53	mg/kg
Benzo(a)pyrene	S	X	2/181	0.48	mg/kg
Benzo(b)fluoranthene	S	X	2/179	0.39	mg/kg
Benzo(ghi)perylene	S	X	0/181	ND	
Benzo(k)fluoranthene	S	X	2/179	0.46	mg/kg
Benzoic acid	S		2/176	0.84	mg/kg
Butyl benzyl phthalate	S		0/181	ND	
Carbon disulfide	V		5/399	1.7	mg/kg
Carbon tetrachloride	V	X	2/405	0.018	mg/kg
Chloroform	V	X	3/405	1.9	mg/kg
Chrysene	S	X	4/181	0.56	mg/kg
Ethylbenzene	V		1/405	0.0020	mg/kg
Fluoranthene	S	X	10/181	47	mg/kg
Fluorene	S	X	1/181	0.19	mg/kg
Heptachlor epoxide	P		0/201	ND	
Hexachlorobutadiene	S		0/181	ND	
Indeno(1,2,3-cd)pyrene	S	X	0/181	ND	
Isophorone	S		0/181	ND	
Methylene chloride	V		113/397	2.1	mg/kg
N-Nitrosodiphenylamine	S		2/181	44	mg/kg
Phenanthrene	S	X	9/181	47	mg/kg
Pyrene	S	X	12/180	49	mg/kg
alpha-BHC	P		0/201	ND	
cis-1,3-Dichloropropene	V		0/405	ND	
OU2 903 Pad					
2-Butanone	V	X	4/192	0.10	mg/kg
2-Chloroethyl vinyl ether	V	X	0/17	ND	
2-Methylnaphthalene	S	X	0/118	ND	
4,4'-DDT	P	X	0/116	ND	
3-Methyl-2-pentanone	V	X	2/196	1.9	mg/kg
4-Nitroaniline	S	X	0/110	ND	
Acenaphthylene	S		0/118	ND	
Acetone	V	X	62/223	1.4	mg/kg
Benzene	V	X	0/222	ND	
Benzo(a)anthracene	S	X	1/118	0.25	mg/kg

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Table 7
Subsurface Soil PCOCs Without Vegetation TRVs

Analyte	Group	PCOC	Detection Frequency	Exposure Point Concentration	Units
Benzo(a)pyrene	S	X	7/118	0.35	mg/kg
Benzo(b)fluoranthene	S	X	1/118	0.23	mg/kg
Benzo(ghi)perylene	S	X	0/118	ND	
Benzo(k)fluoranthene	S		0/118	ND	
Benzoic acid	S	X	0/83	ND	
Butyl benzyl phthalate	S	X	1/118	0.52	mg/kg
Carbon disulfide	V	X	1/222	0.0040	mg/kg
Carbon tetrachloride	V	X	28/222	0.23	mg/kg
Chloroform	V	X	44/227	1.3	mg/kg
Chrysene	S	X	1/118	0.30	mg/kg
Ethylbenzene	V	X	1/222	0.0020	mg/kg
Fluoranthene	S	X	4/118	7.6	mg/kg
Fluorene	S	X	0/118	ND	
Heptachlor epoxide	P		0/116	ND	
Hexachlorobutadiene	S	X	0/118	ND	
Indeno(1,2,3-cd)pyrene	S	X	0/118	ND	
Isophorone	S		0/118	ND	
Methylene chloride	V	X	61/227	0.81	mg/kg
N-Nitrosodiphenylamine	S	X	0/118	ND	
Phenanthrene	S	X	4/118	7.6	mg/kg
Pyrene	S	X	5/118	7.7	mg/kg
alpha-BHC	P		0/116	ND	
cis-1,3-Dichloropropene	V	X	0/222	ND	
OU6 A-Ponds					
2-Butanone	V	X	0/3	ND	
3-Methyl-2-pentanone	V	X	0/3	ND	
Acetone	V	X	1/3	0.013	mg/kg
Benzene	V	X	0/3	ND	
Carbon disulfide	V		0/3	ND	
Carbon tetrachloride	V		0/3	ND	
Chloroform	V	X	0/3	ND	
Ethylbenzene	V		0/3	ND	
Methylene chloride	V	X	0/3	ND	
cis-1,3-Dichloropropene	V		0/3	ND	
2-Butanone	V	X	25/146	0.081	mg/kg
3-Methyl-2-pentanone	V	X	2/146	0.0020	mg/kg
Acetone	V	X	4/152	0.020	mg/kg
Benzene	V	X	1/152	0.0010	mg/kg
Carbon disulfide	V		0/152	ND	
Carbon tetrachloride	V		0/151	ND	
Chloroform	V	X	1/152	0.0020	mg/kg
Ethylbenzene	V		0/152	ND	
Methylene chloride	V	X	1/152	0.054	mg/kg
cis-1,3-Dichloropropene	V		0/152	ND	

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Table 7
Subsurface Soil PCOCs Without Vegetation TRVs

Analyte	Group	PCOC	Detection Frequency	Exposure Point Concentration	Units
OU6 B-Ponds					
2-Butanone	V	X	0/3	ND	
3-Methyl-2-pentanone	V	X	0/3	ND	
Acetone	V	X	0/3	ND	
Benzene	V	X	0/3	ND	
Carbon disulfide	V		0/3	ND	
Carbon tetrachloride	V		0/2	ND	
Chloroform	V	X	0/3	ND	
Ethylbenzene	V		0/3	ND	
Methylene chloride	V	X	0/3	ND	
cis-1,3-Dichloropropene	V		0/3	ND	
OU6 C-Ponds					
2-Butanone	V	X	0/4	ND	
2-Methylnaphthalene	S	X	0/4	ND	
4,4'-DDT	P		0/4	ND	
3-Methyl-2-pentanone	V	X	0/8	ND	
4-Nitroaniline	S		0/4	ND	
Acenaphthylene	S	X	0/4	ND	
Acetone	V	X	2/8	0.0050	mg/kg
Benzene	V		0/8	ND	
Benzo(a)anthracene	S	X	0/4	ND	
Benzo(a)pyrene	S	X	0/4	ND	
Benzo(b)fluoranthene	S	X	0/4	ND	
Benzo(ghi)perylene	S	X	0/4	ND	
Benzo(k)fluoranthene	S	X	0/4	ND	
Benzoic acid	S	X	0/4	ND	
Butyl benzyl phthalate	S	X	0/4	ND	
Carbon disulfide	V		0/8	ND	
Carbon tetrachloride	V		0/8	ND	
Chloroform	V		0/8	ND	
Chrysene	S	X	0/4	ND	
Ethylbenzene	V	X	0/8	ND	
Fluoranthene	S	X	0/4	ND	
Fluorene	S	X	0/4	ND	
Heptachlor epoxide	P	X	0/4	ND	
Hexachlorobutadiene	S		0/4	ND	
Indeno(1,2,3-cd)pyrene	S	X	0/3	ND	
Isophorone	S	X	0/4	ND	
Methylene chloride	V	X	2/8	0.0040	mg/kg
N-Nitrosodiphenylamine	S		0/4	ND	
Phenanthrene	S	X	0/4	ND	
Pyrene	S	X	0/4	ND	
alpha-BHC	P	X	0/4	ND	
cis-1,3-Dichloropropene	V		0/8	ND	

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Table 7
Subsurface Soil PCOCs Without Vegetation TRVs

Analyte	Group	PCOC	Detection Frequency	Exposure Point Concentration	Units
OU7 Downgradient Areas					
2-Butanone	V		0/17	ND	
2-Methylnaphthalene	S		0/19	ND	
3-Methyl-2-pentanone	V	X	1/17	0.014	mg/kg
4-Nitroaniline	S		0/19	ND	
Acenaphthylene	S		0/19	ND	
Acetone	V		0/17	ND	
Benzene	V		0/17	ND	
Benzo(a)anthracene	S	X	1/19	0.048	mg/kg
Benzo(a)pyrene	S		0/19	ND	
Benzo(b)fluoranthene	S		0/19	ND	
Benzo(ghi)perylene	S		0/19	ND	
Benzo(k)fluoranthene	S		0/19	ND	
Benzoic acid	S		0/19	ND	
Butyl benzyl phthalate	S	X	1/19	0.29	mg/kg
Carbon disulfide	V		0/17	ND	
Carbon tetrachloride	V		0/17	ND	
Chloroform	V		0/17	ND	
Chrysene	S	X	1/19	0.043	mg/kg
Ethylbenzene	V		0/17	ND	
Fluoranthene	S	X	1/19	0.11	mg/kg
Fluorene	S		0/19	ND	
Hexachlorobutadiene	S		0/19	ND	
indeno(1,2,3-cd)pyrene	S		0/19	ND	
Isophorone	S		0/19	ND	
Methylene chloride	V	X	0/17	ND	
N-Nitrosodiphenylamine	S		0/19	ND	
Phenanthrene	S	X	1/19	0.10	mg/kg
Pyrene	S	X	1/19	0.11	mg/kg
cis-1,3-Dichloropropene	V		0/17	ND	
OU2 East Trenches					
2-Butanone	V	X	23/277	0.067	mg/kg
2-Chloroethyl vinyl ether	V	X	0/5	ND	
2-Methylnaphthalene	S	X	3/100	0.37	mg/kg
4,4'-DDT	P	X	1/110	0.011	mg/kg
3-Methyl-2-pentanone	V	X	5/306	0.021	mg/kg
4-Nitroaniline	S	X	0/93	ND	
Acenaphthylene	S		0/100	ND	
Acetone	V	X	62/320	1.6	mg/kg
Benzene	V	X	2/318	0.014	mg/kg
Benzo(a)anthracene	S	X	1/100	0.18	mg/kg
Benzo(a)pyrene	S	X	2/100	0.18	mg/kg
Benzo(b)fluoranthene	S	X	1/100	0.18	mg/kg
Benzo(ghi)perylene	S	X	1/100	0.17	mg/kg
Benzo(k)fluoranthene	S		0/100	ND	

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Table 7
Subsurface Soil PCOCs Without Vegetation TRVs

Analyte	Group	PCOC	Detection Frequency	Exposure Point Concentration	Units
Benzoic acid	S	X	1/100	0.40	mg/kg
Butyl benzyl phthalate	S	X	0/100	ND	
Carbon disulfide	V	X	0/317	ND	
Carbon tetrachloride	V	X	29/317	7.7	mg/kg
Chloroform	V	X	61/325	0.42	mg/kg
Chrysene	S	X	2/100	0.18	mg/kg
Ethylbenzene	V	X	4/317	0.026	mg/kg
Fluoranthene	S	X	1/100	0.19	mg/kg
Fluorene	S	X	1/100	0.17	mg/kg
Heptachlor epoxide	P		0/110	ND	
Hexachlorobutadiene	S	X	1/100	0.17	mg/kg
Indeno(1,2,3-cd)pyrene	S	X	1/100	0.17	mg/kg
Isophorone	S		0/100	ND	
Methylene chloride	V	X	62/320	0.93	mg/kg
N-Nitrosodiphenylamine	S	X	0/100	ND	
Phenanthrene	S	X	3/100	0.25	mg/kg
Pyrene	S	X	2/100	0.20	mg/kg
alpha-BHC	P		0/110	ND	
cis-1,3-Dichloropropene	V	X	0/317	ND	
OU2 Mound Area					
2-Butanone	V	X	2/39	0.0070	mg/kg
2-Chloroethyl vinyl ether	V	X	0/1	ND	
2-Methylnaphthalene	S	X	0/7	ND	
4,4'-DDT	P	X	0/7	ND	
3-Methyl-2-pentanone	V	X	1/40	0.0030	mg/kg
4-Nitroaniline	S	X	0/3	ND	
Acenaphthylene	S		0/7	ND	
Acetone	V	X	7/53	0.019	mg/kg
Benzene	V	X	1/53	0.0030	mg/kg
Benzo(a)anthracene	S	X	0/7	ND	
Benzo(a)pyrene	S	X	0/7	ND	
Benzo(b)fluoranthene	S	X	0/7	ND	
Benzo(ghi)perylene	S	X	0/7	ND	
Benzo(k)fluoranthene	S		0/7	ND	
Benzoic acid	S	X	0/7	ND	
Butyl benzyl phthalate	S	X	0/7	ND	
Carbon disulfide	V	X	0/53	ND	
Carbon tetrachloride	V	X	3/52	0.0042	mg/kg
Chloroform	V	X	2/53	0.0066	mg/kg
Chrysene	S	X	0/7	ND	
Ethylbenzene	V	X	0/53	ND	
Fluoranthene	S	X	1/7	0.11	mg/kg
Fluorene	S	X	0/7	ND	
Heptachlor epoxide	P		0/7	ND	
Hexachlorobutadiene	S	X	0/7	ND	

Attachment 6
Table 7
Subsurface Soil PCOCs Without Vegetation TRVs

Analyte	Group	PCOC	Detection Frequency	Exposure Point Concentration	Units
Indeno(1,2,3-cd)pyrene	S	X	0/7	ND	
Isophorone	S		0/7	ND	
Methylene chloride	V	X	15/53	0.0091	mg/kg
N-Nitrosodiphenylamine	S	X	0/7	ND	
Phenanthrene	S	X	0/7	ND	
Pyrene	S	X	0/7	ND	
alpha-BHC	P		0/7	ND	
cis-1,3-Dichloropropene	V	X	0/53	ND	
OU6 North Spray Field					
2-Butanone	V	X	0/3	ND	
3-Methyl-2-pentanone	V	X	0/3	ND	
Acetone	V	X	0/3	ND	
Benzene	V	X	0/3	ND	
Carbon disulfide	V		0/3	ND	
Carbon tetrachloride	V		0/3	ND	
Chloroform	V	X	0/3	ND	
Ethylbenzene	V		0/3	ND	
Methylene chloride	V	X	0/3	ND	
cis-1,3-Dichloropropene	V		0/3	ND	
OU5 Old Landfill					
2-Butanone	V	X	8/128	0.0088	mg/kg
2-Methylnaphthalene	S	X	9/61	0.87	mg/kg
4,4'-DDT	P		0/61	ND	
3-Methyl-2-pentanone	V	X	1/152	0.0020	mg/kg
4-Nitroaniline	S		0/53	ND	
Acenaphthylene	S	X	2/61	0.084	mg/kg
Acetone	V	X	9/140	0.026	mg/kg
Benzene	V		0/152	ND	
Benzo(a)anthracene	S	X	17/61	2.5	mg/kg
Benzo(a)pyrene	S	X	15/61	2.3	mg/kg
Benzo(b)fluoranthene	S	X	16/61	2.6	mg/kg
Benzo(ghi)perylene	S	X	14/61	0.76	mg/kg
Benzo(k)fluoranthene	S	X	15/61	1.1	mg/kg
Benzoic acid	S	X	12/59	0.48	mg/kg
Butyl benzyl phthalate	S	X	2/61	0.36	mg/kg
Carbon disulfide	V		0/153	ND	
Carbon tetrachloride	V		0/151	ND	
Chloroform	V		0/153	ND	
Chrysene	S	X	17/61	2.7	mg/kg
Ethylbenzene	V	X	1/153	0.0045	mg/kg
Fluoranthene	S	X	20/61	5.6	mg/kg
Fluorene	S	X	14/61	1.8	mg/kg
Heptachlor epoxide	P	X	1/61	0.0043	mg/kg
Hexachlorobutadiene	S		0/61	ND	
Indeno(1,2,3-cd)pyrene	S	X	12/61	0.87	mg/kg

Attachment 6
Table 7
Subsurface Soil PCOCs Without Vegetation TRVs

Analyte	Group	PCOC	Detection Frequency	Exposure Point Concentration	Units
Isophorone	S	X	1/61	0.082	mg/kg
Methylene chloride	V	X	16/153	0.0060	mg/kg
N-Nitrosodiphenylamine	S		0/61	ND	
Phenanthrene	S	X	21/61	6.5	mg/kg
Pyrene	S	X	21/61	4.5	mg/kg
alpha-BHC	P	X	1/61	0.0045	mg/kg
cis-1,3-Dichloropropene	V		0/153	ND	
OU4 Downgradient Area					
3-Methyl-2-pentanone	V		0/22	ND	
Acetone	V	X	6/18	0.020	mg/kg
Benzene	V		0/25	ND	
Carbon disulfide	V		0/25	ND	
Carbon tetrachloride	V		0/25	ND	
Chloroform	V	X	0/25	ND	
Ethylbenzene	V		0/25	ND	
Methylene chloride	V	X	23/25	0.011	mg/kg
cis-1,3-Dichloropropene	V		0/25	ND	
OU6 Soil Dump Areas					
2-Butanone	V	X	43/183	0.28	mg/kg
2-Methylnaphthalene	S		0/30	ND	
4,4'-DDT	P		0/5	ND	
3-Methyl-2-pentanone	V	X	1/193	0.0040	mg/kg
4-Nitroaniline	S		0/25	ND	
Acenaphthylene	S		0/30	ND	
Acetone	V	X	30/193	0.22	mg/kg
Benzene	V	X	1/193	0.0030	mg/kg
Benzo(a)anthracene	S	X	1/30	0.10	mg/kg
Benzo(a)pyrene	S	X	2/29	0.13	mg/kg
Benzo(b)fluoranthene	S	X	3/30	0.17	mg/kg
Benzo(ghi)perylene	S		0/30	ND	
Benzo(k)fluoranthene	S	X	1/30	0.06	mg/kg
Benzoic acid	S	X	4/25	0.26	mg/kg
Butyl benzyl phthalate	S		0/30	ND	
Carbon disulfide	V		0/193	ND	
Carbon tetrachloride	V		0/188	ND	
Chloroform	V	X	0/193	ND	
Chrysene	S	X	1/30	0.12	mg/kg
Ethylbenzene	V		0/193	ND	
Fluoranthene	S	X	5/30	0.20	mg/kg
Fluorene	S		0/30	ND	
Heptachlor epoxide	P		0/5	ND	
Hexachlorobutadiene	S		0/30	ND	
Indeno(1,2,3-cd)pyrene	S	X	1/30	0.099	mg/kg
Isophorone	S		0/30	ND	
Methylene chloride	V	X	7/193	0.0030	mg/kg

Attachment 6
Table 7
Subsurface Soil PCOCs Without Vegetation TRVs

Analyte	Group	PCOC	Detection Frequency	Exposure Point Concentration	Units
N-Nitrosodiphenylamine	S		0/30	ND	
Phenanthrene	S	X	3/30	0.17	mg/kg
Pyrene	S	X	6/30	0.19	mg/kg
alpha-BHC	P		0/5	ND	
cis-1,3-Dichloropropene	V		0/193	ND	
OU11 West Spray Field					
2-Butanone	V		2/90	0.0040	mg/kg
2-Methylnaphthalene	S		0/127	ND	
3-Methyl-2-pentanone	V		0/98	ND	
4-Nitroaniline	S		0/123	ND	
Acenaphthylene	S		0/127	ND	
Acetone	V		15/82	0.0056	mg/kg
Benzene	V		0/107	ND	
Benzo(a)anthracene	S		0/127	ND	
Benzo(a)pyrene	S		0/127	ND	
Benzo(b)fluoranthene	S		0/127	ND	
Benzo(ghi)perylene	S		0/127	ND	
Benzo(k)fluoranthene	S		0/127	ND	
Benzoic acid	S		0/120	ND	
Butyl benzyl phthalate	S		0/127	ND	
Carbon disulfide	V		0/101	ND	
Carbon tetrachloride	V		0/107	ND	
Chloroform	V		3/108	0.0054	mg/kg
Chrysene	S		0/127	ND	
Ethylbenzene	V		0/107	ND	
Fluoranthene	S		0/127	ND	
Fluorene	S		0/127	ND	
Hexachlorobutadiene	S		0/127	ND	
Indeno(1,2,3-cd)pyrene	S		0/127	ND	
Isophorone	S		0/127	ND	
Methylene chloride	V		39/106	0.0049	mg/kg
N-Nitrosodiphenylamine	S		0/127	ND	
Phenanthrene	S		0/127	ND	
Pyrene	S		0/127	ND	
cis-1,3-Dichloropropene	V		0/107	ND	

ND - analyte not detected

Attachment 6
Table 8
Sediment PCOCs Without Vegetation TRVs

Analyte	Group	PCOC	Detection Frequency	Exposure Point Concentration	Units
881 Hillside					
2-Butanone	V		1/3	0.011	mg/kg
2-Methylnaphthalene	S	X	0/3	ND	
4,4'-DDT	P		0/3	ND	
3-Methyl-2-pentanone	V		0/2	ND	
Acenaphthylene	S		0/3	ND	
Acetone	V		1/3	0.036	mg/kg
Benzene	V		0/2	ND	
Benzo(a)anthracene	S	X	0/3	ND	
Benzo(a)pyrene	S	X	0/3	ND	
Benzo(b)fluoranthene	S	X	1/3	0.19	mg/kg
Benzo(ghi)perylene	S	X	0/3	ND	
Benzo(k)fluoranthene	S	X	1/3	0.11	mg/kg
Benzoic acid	S		0/3	ND	
Butyl benzyl phthalate	S		0/3	ND	
Chloroform	V	X	0/2	ND	
Chrysene	S	X	2/3	0.19	mg/kg
Fluoranthene	S	X	2/3	0.38	mg/kg
Fluorene	S	X	0/3	ND	
Heptachlor epoxide	P		0/3	ND	
Indeno(1,2,3-cd)pyrene	S	X	0/3	ND	
Isophorone	S		0/3	ND	
Methylene chloride	V		0/3	ND	
Phenanthrene	S	X	1/3	0.19	mg/kg
Pyrene	S	X	1/3	0.31	mg/kg
OU2 903 Pad					
2-Butanone	V	X	3/15	0.011	mg/kg
2-Methylnaphthalene	S	X	0/13	ND	
4,4'-DDT	P	X	1/15	0.0055	mg/kg
3-Methyl-2-pentanone	V	X	1/17	0.0030	mg/kg
Acenaphthylene	S		0/13	ND	
Acetone	V	X	5/17	0.066	mg/kg
Benzene	V	X	0/17	ND	
Benzo(a)anthracene	S	X	2/13	0.11	mg/kg
Benzo(a)pyrene	S	X	1/13	0.11	mg/kg
Benzo(b)fluoranthene	S	X	2/13	0.12	mg/kg
Benzo(ghi)perylene	S	X	0/13	ND	
Benzo(k)fluoranthene	S		2/13	0.11	mg/kg
Benzoic acid	S	X	0/13	ND	
Butyl benzyl phthalate	S	X	0/13	ND	
Chloroform	V	X	0/17	ND	
Chrysene	S	X	2/13	0.14	mg/kg
Fluoranthene	S	X	3/13	0.23	mg/kg
Fluorene	S	X	0/13	ND	

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Table 8
Sediment PCOCs Without Vegetation TRVs

Analyte	Group	PCOC	Detection Frequency	Exposure Point Concentration	Units
Heptachlor epoxide	P		0/15	ND	
Indeno(1,2,3-cd)pyrene	S	X	0/13	ND	
Isophorone	S		0/13	ND	
Methylene chloride	V	X	5/17	0.0091	mg/kg
Phenanthrene	S	X	2/13	0.19	mg/kg
Pyrene	S	X	4/13	0.26	mg/kg
OU5 Ash Pits					
2-Butanone	V	X	1/6	0.30	mg/kg
2-Methylnaphthalene	S	X	0/4	ND	
4,4'-DDT	P		0/5	ND	
3-Methyl-2-pentanone	V	X	0/5	ND	
Acenaphthylene	S	X	0/4	ND	
Acetone	V	X	3/6	1.2	mg/kg
Benzene	V		0/5	ND	
Benzo(a)anthracene	S	X	0/4	ND	
Benzo(a)pyrene	S	X	0/4	ND	
Benzo(b)fluoranthene	S	X	0/4	ND	
Benzo(ghi)perylene	S	X	0/4	ND	
Benzo(k)fluoranthene	S	X	0/4	ND	
Benzoic acid	S	X	1/5	0.27	mg/kg
Butyl benzyl phthalate	S	X	0/4	ND	
Chloroform	V		1/5	0.0030	mg/kg
Chrysene	S	X	0/4	ND	
Fluoranthene	S	X	0/4	ND	
Fluorene	S	X	0/4	ND	
Heptachlor epoxide	P	X	0/5	ND	
Indeno(1,2,3-cd)pyrene	S	X	0/4	ND	
Isophorone	S	X	0/4	ND	
Methylene chloride	V	X	1/6	0.012	mg/kg
Phenanthrene	S	X	0/4	ND	
Pyrene	S	X	0/4	ND	
OU6 A-Ponds					
2-Butanone	V	X	14/25	0.051	mg/kg
2-Methylnaphthalene	S		0/27	ND	
4,4'-DDT	P		0/27	ND	
3-Methyl-2-pentanone	V	X	1/25	0.0060	mg/kg
Acenaphthylene	S		0/27	ND	
Acetone	V	X	3/25	0.23	mg/kg
Benzene	V	X	1/25	0.0030	mg/kg
Benzo(a)anthracene	S	X	7/27	0.27	mg/kg
Benzo(a)pyrene	S	X	9/27	0.28	mg/kg
Benzo(b)fluoranthene	S	X	9/27	0.31	mg/kg
Benzo(ghi)perylene	S		4/27	0.21	mg/kg
Benzo(k)fluoranthene	S	X	5/27	0.20	mg/kg

Attachment 6
Table 8
Sediment PCOCs Without Vegetation TRVs

Analyte	Group	PCOC	Detection Frequency	Exposure Point Concentration	Units
Benzoic acid	S	X	8/27	0.50	mg/kg
Butyl benzyl phthalate	S		0/27	ND	
Chloroform	V	X	0/25	ND	
Chrysene	S	X	13/27	0.27	mg/kg
Fluoranthene	S	X	13/27	0.41	mg/kg
Fluorene	S		0/27	ND	
Heptachlor epoxide	P		0/27	ND	
Indeno(1,2,3-cd)pyrene	S	X	4/27	0.20	mg/kg
Isophorone	S		0/27	ND	
Methylene chloride	V	X	0/25	ND	
Phenanthrene	S	X	12/27	0.31	mg/kg
Pyrene	S	X	15/27	0.34	mg/kg
OU6 B-Ponds					
2-Butanone	V	X	12/24	0.029	mg/kg
2-Methylnaphthalene	S		1/33	0.17	mg/kg
4,4'-DDT	P		0/33	ND	
3-Methyl-2-pentanone	V	X	0/24	ND	
Acenaphthylene	S		0/33	ND	
Acetone	V	X	9/24	0.19	mg/kg
Benzene	V	X	0/24	ND	
Benzo(a)anthracene	S	X	16/33	0.43	mg/kg
Benzo(a)pyrene	S	X	15/33	0.40	mg/kg
Benzo(b)fluoranthene	S	X	18/33	0.85	mg/kg
Benzo(ghi)perylene	S		2/33	0.27	mg/kg
Benzo(k)fluoranthene	S	X	14/33	0.41	mg/kg
Benzoic acid	S	X	0/33	ND	
Butyl benzyl phthalate	S		2/33	0.11	mg/kg
Chloroform	V	X	0/24	ND	
Chrysene	S	X	18/33	0.61	mg/kg
Fluoranthene	S	X	26/33	1.1	mg/kg
Fluorene	S		2/33	0.35	mg/kg
Heptachlor epoxide	P		0/34	ND	
Indeno(1,2,3-cd)pyrene	S	X	4/33	0.35	mg/kg
Isophorone	S		0/33	ND	
Methylene chloride	V	X	1/24	0.0090	mg/kg
Phenanthrene	S	X	20/33	0.74	mg/kg
Pyrene	S	X	23/33	0.95	mg/kg
OU5 C-Ponds					
2-Butanone	V	X	5/21	0.027	mg/kg
2-Methylnaphthalene	S	X	0/24	ND	
4,4'-DDT	P		0/28	ND	
3-Methyl-2-pentanone	V	X	0/27	ND	
Acenaphthylene	S	X	0/24	ND	
Acetone	V	X	6/26	0.12	mg/kg

Attachment 6
Table 8
Sediment PCOCs Without Vegetation TRVs

Analyte	Group	PCOC	Detection Frequency	Exposure Point Concentration	Units
Benzene	V		0/27	ND	
Benzo(a)anthracene	S	X	0/24	ND	
Benzo(a)pyrene	S	X	0/24	ND	
Benzo(b)fluoranthene	S	X	0/24	ND	
Benzo(ghi)perylene	S	X	0/24	ND	
Benzo(k)fluoranthene	S	X	0/24	ND	
Benzoic acid	S	X	4/25	0.49	mg/kg
Butyl benzyl phthalate	S	X	1/24	0.057	mg/kg
Chloroform	V		0/27	ND	
Chrysene	S	X	0/24	ND	
Fluoranthene	S	X	1/24	0.14	mg/kg
Fluorene	S	X	0/24	ND	
Heptachlor epoxide	P	X	0/28	ND	
Indeno(1,2,3-cd)pyrene	S	X	0/24	ND	
Isophorone	S	X	0/24	ND	
Methylene chloride	V	X	4/27	0.020	mg/kg
Phenanthrene	S	X	0/24	ND	
Pyrene	S	X	0/24	ND	
OU7 Downgradient Areas					
2-Butanone	V		0/5	ND	
2-Methylnaphthalene	S		0/5	ND	
4,4'-DDT	P		0/4	ND	
3-Methyl-2-pentanone	V	X	0/5	ND	
Acenaphthylene	S		0/5	ND	
Acetone	V		1/5	0.038	mg/kg
Benzene	V		0/5	ND	
Benzo(a)anthracene	S	X	2/5	0.29	mg/kg
Benzo(a)pyrene	S		2/5	0.24	mg/kg
Benzo(b)fluoranthene	S		2/5	0.19	mg/kg
Benzo(ghi)perylene	S		1/5	0.089	mg/kg
Benzo(k)fluoranthene	S		2/5	0.27	mg/kg
Benzoic acid	S		0/4	ND	
Butyl benzyl phthalate	S	X	0/5	ND	
Chloroform	V		0/5	ND	
Chrysene	S	X	2/5	0.31	mg/kg
Fluoranthene	S	X	2/5	0.45	mg/kg
Fluorene	S		0/5	ND	
Heptachlor epoxide	P		0/4	ND	
Indeno(1,2,3-cd)pyrene	S		2/5	0.16	mg/kg
Isophorone	S		0/5	ND	
Methylene chloride	V	X	0/4	ND	
Phenanthrene	S	X	2/5	0.31	mg/kg
Pyrene	S	X	2/5	0.43	mg/kg

Attachment 6
Table 8
Sediment PCOCs Without Vegetation TRVs

Analyte	Group	PCOC	Detection Frequency	Exposure Point Concentration	Units
OU5 Old Landfill					
2-Butanone	V	X	0/3	ND	
2-Methylnaphthalene	S	X	0/3	ND	
4,4'-DDT	P		0/3	ND	
3-Methyl-2-pentanone	V	X	0/3	ND	
Acenaphthylene	S	X	0/3	ND	
Acetone	V	X	1/3	0.046	mg/kg
Benzene	V		0/3	ND	
Benzo(a)anthracene	S	X	1/3	0.038	mg/kg
Benzo(a)pyrene	S	X	0/3	ND	
Benzo(b)fluoranthene	S	X	0/3	ND	
Benzo(ghi)perylene	S	X	0/3	ND	
Benzo(k)fluoranthene	S	X	0/3	ND	
Benzoic acid	S	X	0/3	ND	
Butyl benzyl phthalate	S	X	0/3	ND	
Chloroform	V		0/3	ND	
Chrysene	S	X	1/3	0.041	mg/kg
Fluoranthene	S	X	2/3	0.097	mg/kg
Fluorene	S	X	0/3	ND	
Heptachlor epoxide	P	X	0/3	ND	
Indeno(1,2,3-cd)pyrene	S	X	0/3	ND	
Isophorone	S	X	0/3	ND	
Methylene chloride	V	X	0/3	ND	
Phenanthrene	S	X	2/3	0.082	mg/kg
Pyrene	S	X	2/3	0.097	mg/kg

ND - analyte not detected

Attachment 6
Table 9
Small Mammal Burrow Air ECOC Screen

Analyte	OU2 PCOC	Molecular Weight[1] (grams/mole)	Henry's Law Constant[2] (atm m³/mole)	Maximum Detected Concentration in Subsurface Soil[1] (mg/kg)	Molar Concentration in Subsurface Soil[3] (mole/m³)	Partial Pressure (V_p) (atm)	Estimated Concentration in Burrow Air (mg/m³)	Inhalation TRV from IRIS (mg/m³)	Hazard Quotient	Effects Level (atm)	Effects Level in Soil (mole/m³)	Equivalent Effects Level in Soil (mg/kg)
903 Pad												
1,1,1-Trichloroethane	X	133	1.62E-02	1.00E-02	1.50E-04	2.44E-06	1.41E+01	ND[4]	NC	NC	NC	NC
1,1,2,2-Tetrachloroethane	X	168	3.80E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
1,1-Dichloroethene		97	1.80E-02	3.00E-03	6.19E-05	1.11E-06	4.70E+00	ND	NC	NC	NC	NC
1,2-Dichloroethane	X	99	9.80E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
1,2-Dichloroethene	X	97	7.20E-03	9.00E-03	1.86E-04	1.34E-06	5.64E+00	ND	NC	NC	NC	NC
1,4-Dichlorobenzene	X	147	3.10E-03	4.30E-02	5.85E-04	1.81E-06	1.16E+01	301	3.85E-02	4.71E-05	1.52E-02	1.12E+00
2-Butanone	X	72	4.66E-05	1.00E-01	2.78E-03	1.29E-07	4.05E-01	2978	1.36E-04	9.51E-04	2.04E+01	7.35E+02
2-Chloroethyl vinyl ether	X	107	2.50E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
2-Chlorophenol		129	8.28E-06	ND	NC	NC	NC	ND	NC	NC	NC	NC
2-Methylnaphthalene	X	142	ND	ND	NC	NC	NC	ND	NC	NC	NC	NC
2-Methylphenol	X	108	1.23E-06	ND	NC	NC	NC	ND	NC	NC	NC	NC
4,4'-DDT	X	354	4.89E-05	ND	NC	NC	NC	ND	NC	NC	NC	NC
4-Methyl-2-pentanone	X	100	1.49E-05	4.20E+01	8.40E-01	1.25E-05	5.44E+01	ND[4]	NC	NC	NC	NC
4-Methylphenol	X	108	7.92E-07	ND	NC	NC	NC	ND	NC	NC	NC	NC
4-Nitroaniline	X	138	1.14E-08	ND	NC	NC	NC	ND[5]	NC	NC	NC	NC
Acenaphthene	X	154	1.70E-04	6.30E-02	8.18E-04	1.39E-07	9.31E-01	ND	NC	NC	NC	NC
Acenaphthylene		152	2.00E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
Acetone	X	58	3.97E-05	1.30E+01	4.48E-01	1.78E-05	4.49E+01	ND	NC	NC	NC	NC
Anthracene	X	178	6.50E-05	9.10E-02	1.02E-03	6.65E-08	5.14E-01	ND[4]	NC	NC	NC	NC
Aroclor-1254	X	327	2.70E-03	5.90E+00	3.61E-02	9.74E-05	1.39E+03	ND	NC	NC	NC	NC
Aroclor-1260		370	7.10E-03	ND	NC	NC	NC	ND	NC	NC	NC	NC
Benzene	X	78	5.40E-03	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
Benzo(a)anthracene	X	228	2.30E-06	2.50E-01	2.19E-03	5.04E-09	5.00E-02	ND[4]	NC	NC	NC	NC
Benzo(a)pyrene	X	252	2.40E-06	3.50E-01	2.78E-03	6.67E-09	7.31E-02	ND	NC	NC	NC	NC
Benzo(b)fluoranthene	X	252	1.20E-05	2.30E-01	1.83E-03	2.19E-08	2.40E-01	ND	NC	NC	NC	NC
Benzo(ghi)perylene	X	276	1.40E-07	ND	NC	NC	NC	ND	NC	NC	NC	NC
Benzo(k)fluoranthene		252	1.04E-03	ND	NC	NC	NC	ND	NC	NC	NC	NC
Benzoic acid	X	122	7.02E-08	ND	NC	NC	NC	ND	NC	NC	NC	NC
Bis(2-ethylhexyl)phthalate	X	391	1.10E-05	4.50E+00	2.30E-02	2.53E-07	4.31E+00	ND	NC	NC	NC	NC
Butyl benzyl phthalate	X	312	1.30E-06	5.20E-01	3.33E-03	4.33E-09	5.88E-02	ND	NC	NC	NC	NC
Carbon disulfide	X	76	1.33E-02	4.00E-03	1.05E-04	1.40E-06	4.63E+00	ND[4]	NC	NC	NC	NC
Carbon tetrachloride	X	154	2.40E-02	2.30E-01	2.99E-03	7.17E-05	4.80E+02	ND	NC	NC	NC	NC
Chlorobenzene		113	3.93E-03	1.10E-02	1.95E-04	7.65E-07	3.76E+00	ND	NC	NC	NC	NC
Chloroethane	X	65	1.00E-02	ND	NC	NC	NC	4000	NC	1.42E-03	1.42E-01	4.60E+00
Chloroform	X	119	3.23E-03	6.30E+01	1.06E+00	3.42E-03	1.77E+04	ND[4]	NC	NC	NC	NC
Chrysene	X	228	7.26E-02	3.00E-01	2.63E-03	1.91E-04	1.89E+03	ND	NC	NC	NC	NC
Di-N-butyl phthalate	X	278	6.30E-05	6.90E-01	4.96E-03	3.13E-07	3.78E+00	ND	NC	NC	NC	NC
Di-N-octyl phthalate	X	391	1.41E-12	7.50E-02	3.84E-04	5.41E-16	9.20E-09	ND[5]	NC	NC	NC	NC
Dibenzo(ah)anthracene		278	7.33E-09	ND	NC	NC	NC	ND	NC	NC	NC	NC
Dibenzofuran		168	ND	ND	NC	NC	NC	ND	NC	NC	NC	NC
Diethyl phthalate		222	8.46E-07	8.20E-02	7.39E-04	6.25E-10	6.03E-03	ND	NC	NC	NC	NC

Attachment 6
Table 9
Small Mammal Burrow Air ECOC Screen

Analyte	OU2 PCOC	Molecular Weight[1] (grams/mole)	Henry's Law Constant[2] (atm m³/mole)	Maximum Detected Concentration in Subsurface Soil[1] (mg/kg)	Molar Concentration in Subsurface Soil[3] (mole/m³)	Partial Pressure (V_p) (atm)	Estimated Concentration in Burrow Air (mg/m³)	Inhalation TRV from IRIS (mg/m³)	Hazard Quotient	Effects Level (atm)	Effects Level in Soil (mole/m³)	Equivalent Effects Level in Soil (mg/kg)
Ethylbenzene	X	106	6.60E-03	2.00E-03	3.77E-05	2.49E-07	1.15E+00	434	2.65E-03	9.42E-05	1.43E-02	7.56E-01
Fluoranthene	X	202	1.69E-02	4.70E+01	4.65E-01	7.86E-03	6.91E+04	ND[4]	NC	NC	NC	NC
Fluorene	X	166	2.10E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
Heptachlor epoxide		389	3.20E-05	ND	NC	NC	NC	ND	NC	NC	NC	NC
Hexachlorobutadiene	X	261	1.03E-02	ND	NC	NC	NC	ND	NC	NC	NC	NC
Hexachloroethane	X	237	2.50E-03	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
Indeno(1,2,3-cd)pyrene	X	276	2.96E-20	ND	NC	NC	NC	ND	NC	NC	NC	NC
Isophorone		138	5.80E-06	ND	NC	NC	NC	ND	NC	NC	NC	NC
Methylene chloride	X	85	2.00E-03	9.00E+00	2.12E-01	4.24E-04	1.57E+03	ND[4]	NC	NC	NC	NC
N-Nitrosodiphenylamine	X	198	2.33E-08	ND	NC	NC	NC	ND	NC	NC	NC	NC
Naphthalene	X	128	4.60E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
Pentachlorophenol	X	266	2.10E-06	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
Phenanthrene	X	178	3.90E-05	4.20E+01	4.72E-01	1.84E-05	1.42E+02	ND[4]	NC	NC	NC	NC
Phenol		94	2.70E-07	ND	NC	NC	NC	ND	NC	NC	NC	NC
Pyrene	X	202	1.09E-05	5.10E+01	5.05E-01	5.50E-06	4.83E+01	ND[4]	NC	NC	NC	NC
Styrene	X	104	2.61E-03	ND	NC	NC	NC	94	NC	2.08E-05	7.96E-03	4.14E-01
Tetrachloroethene	X	166	1.53E-02	1.10E-01	1.33E-03	2.03E-05	1.46E+02	ND	NC	NC	NC	NC
Toluene	X	92	6.70E-03	7.30E+02	1.59E+01	1.06E-01	4.25E+05	226.1	1.88E+03	5.65E-05	8.44E-03	3.88E-01
Total xylenes	X	106	6.46E-03	8.90E-02	1.68E-03	1.08E-05	5.00E+01	ND[4]	NC	NC	NC	NC
Trichloroethene	X	131	9.10E-03	5.70E+00	8.70E-02	7.92E-04	4.51E+03	ND[4]	NC	NC	NC	NC
alpha-BHC		291	5.30E-06	ND	NC	NC	NC	ND	NC	NC	NC	NC
cis-1,3-Dichloropropene	X	111	1.30E-03	ND	NC	NC	NC	20.9	NC	4.33E-06	3.33E-03	1.85E-01
								HAZARD INDEX	***1.88E+03***			
East Trenches												
1,1,1-Trichloroethane	X	133	1.62E-02	2.70E+01	4.06E-01	6.58E-03	3.80E+04	ND[4]	NC	NC	NC	NC
1,1,2,2-Tetrachloroethane	X	168	3.80E-04	1.30E-02	1.55E-04	5.88E-08	4.30E-01	ND	NC	NC	NC	NC
1,1-Dichloroethene		97	1.80E-02	9.00E-03	1.86E-04	3.34E-06	1.41E+01	ND	NC	NC	NC	NC
1,2-Dichloroethane	X	99	9.80E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
1,2-Dichloroethene	X	97	7.20E-03	9.00E-02	1.86E-03	1.34E-05	5.64E+01	ND	NC	NC	NC	NC
1,4-Dichlorobenzene	X	147	3.10E-03	ND	NC	NC	NC	301	NC	4.71E-05	1.52E-02	1.12E+00
2-Butanone	X	72	4.66E-05	6.70E-02	1.86E-03	8.67E-08	2.72E-01	2978	9.12E-05	9.51E-04	2.04E+01	7.35E+02
2-Chloroethyl Vinyl Ether	X	107	2.50E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
2-Chlorophenol		129	8.28E-06	ND	NC	NC	NC	ND	NC	NC	NC	NC
2-Methylnaphthalene	X	142	ND	8.10E+00	1.14E-01	NC	NC	ND	NC	NC	NC	NC
2-Methylphenol	X	108	1.23E-06	4.50E-01	8.33E-03	1.03E-08	4.81E-02	ND	NC	NC	NC	NC
4,4'-DDT	X	354	4.89E-05	1.40E-01	7.91E-04	3.87E-08	5.95E-01	ND	NC	NC	NC	NC
4-Methyl-2-pentanone	X	100	1.49E-05	2.10E-02	4.20E-04	6.26E-09	2.72E-02	ND[4]	NC	NC	NC	NC
4-Methylphenol	X	108	7.92E-07	2.90E+00	5.37E-02	4.25E-08	2.00E-01	ND	NC	NC	NC	NC
4-Nitroaniline	X	138	1.14E-08	ND	NC	NC	NC	ND[5]	NC	NC	NC	NC
Acenaphthene	X	154	1.70E-04	2.80E-01	3.64E-03	6.18E-07	4.14E+00	ND	NC	NC	NC	NC
Acenaphthylene		152	2.00E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
Acetone	X	58	3.97E-05	8.60E+01	2.97E+00	[illegible]18E-04	2.97E+02	ND	NC	NC	NC	NC

Attachment 6
Table 9
Small Mammal Burrow Air ECOC Screen

Analyte	OU2 PCOC	Molecular Weight[1] (grams/mole)	Henry's Law Constant[2] (atm m³/mole)	Maximum Detected Concentration in Subsurface Soil[1] (mg/kg)	Molar Concentration in Subsurface Soil[3] (mole/m³)	Partial Pressure (V_p) (atm)	Estimated Concentration in Burrow Air (mg/m³)	Inhalation TRV from IRIS (mg/m³)	Hazard Quotient	Effects Level (atm)	Effects Level in Soil (mole/m³)	Equivalent Effects Level in Soil (mg/kg)
Anthracene	X	178	6.50E-05	2.60E-01	2.92E-03	1.90E-07	1.47E+00	ND[4]	NC	NC	NC	NC
Aroclor-1254	X	327	2.70E-03	8.90E+00	5.44E-02	1.47E-04	2.09E+03	ND	NC	NC	NC	NC
Aroclor-1260		370	7.10E-03	ND	NC	NC	NC	ND	NC	NC	NC	NC
Benzene	X	78	5.40E-03	1.40E-02	3.59E-04	1.94E-06	6.57E+00	ND[4]	NC	NC	NC	NC
Benzo(a)anthracene	X	228	2.30E-06	5.30E-01	4.65E-03	1.07E-08	1.06E-01	ND[4]	NC	NC	NC	NC
Benzo(a)pyrene	X	252	2.40E-06	4.80E-01	3.81E-03	9.14E-09	1.00E-01	ND	NC	NC	NC	NC
Benzo(b)fluoranthene	X	252	1.20E-05	8.20E-01	6.51E-03	7.81E-08	8.56E-01	ND	NC	NC	NC	NC
Benzo(ghi)perylene	X	276	1.40E-07	3.60E-01	2.61E-03	3.65E-10	4.38E-03	ND	NC	NC	NC	NC
Benzo(k)fluoranthene		252	1.04E-03	ND	NC	NC	NC	ND	NC	NC	NC	NC
Benzoic acid	X	122	7.02E-08	4.00E-01	6.56E-03	4.60E-10	2.44E-03	ND	NC	NC	NC	NC
Bis(2-ethylhexyl)phthalate	X	391	1.10E-05	5.50E+00	2.81E-02	3.09E-07	5.26E+00	ND	NC	NC	NC	NC
Butyl benzyl phthalate	X	312	1.30E-06	ND	NC	NC	NC	ND	NC	NC	NC	NC
Carbon disulfide	X	76	1.33E-02	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
Carbon tetrachloride	X	154	2.40E-02	7.00E+02	9.09E+00	2.18E-01	1.46E+06	ND	NC	NC	NC	NC
Chlorobenzene		113	3.93E-03	ND	NC	NC	NC	ND	NC	NC	NC	NC
Chloroethane	X	65	1.00E-02	ND	NC	NC	NC	4000	NC	1.42E-03	1.42E-01	4.60E+00
Chloroform	X	119	3.23E-03	8.80E+00	1.48E-01	4.78E-04	2.47E+03	ND[4]	NC	NC	NC	NC
Chrysene	X	228	7.26E-02	4.20E-01	3.68E-03	2.67E-04	2.65E+03	ND	NC	NC	NC	NC
Di-N-butyl phthalate	X	278	6.30E-05	1.30E+00	9.35E-03	5.89E-07	7.12E+00	ND	NC	NC	NC	NC
Di-N-octyl phthalate	X	391	1.41E-12	ND	NC	NC	NC	ND[5]	NC	NC	NC	NC
Dibenzo(ah)anthracene		278	7.33E-09	ND	NC	NC	NC	ND	NC	NC	NC	NC
Dibenzofuran		168	ND	ND	NC	NC	NC	ND	NC	NC	NC	NC
Diethyl phthalate		222	8.46E-07	1.60E-01	1.44E-03	1.22E-09	1.18E-02	ND	NC	NC	NC	NC
Ethylbenzene	X	106	6.60E-03	2.60E-02	4.91E-04	3.24E-06	1.49E+01	434	3.44E-02	9.42E-05	1.43E-02	7.56E-01
Fluoranthene	X	202	1.69E-02	1.00E+00	9.90E-03	1.67E-04	1.47E+03	ND[4]	NC	NC	NC	NC
Fluorene	X	166	2.10E-04	1.90E-01	2.29E-03	4.81E-07	3.47E+00	ND	NC	NC	NC	NC
Heptachlor epoxide		389	3.20E-05	ND	NC	NC	NC	ND	NC	NC	NC	NC
Hexachlorobutadiene	X	261	1.03E-02	1.70E-01	1.30E-03	1.34E-05	1.52E+02	ND	NC	NC	NC	NC
Hexachloroethane	X	237	2.50E-03	1.10E+00	9.28E-03	2.32E-05	2.39E+02	ND[4]	NC	NC	NC	NC
Indeno(1,2,3-cd)pyrene	X	276	2.96E-20	3.30E-01	2.39E-03	7.08E-23	8.50E-16	ND	NC	NC	NC	NC
Isophorone		138	5.80E-06	ND	NC	NC	NC	ND	NC	NC	NC	NC
Methylene chloride	X	85	2.00E-03	5.50E+01	1.29E+00	2.59E-03	9.57E+03	ND[4]	NC	NC	NC	NC
N-Nitrosodiphenylamine	X	198	2.33E-08	ND	NC	NC	NC	ND	NC	NC	NC	NC
Naphthalene	X	128	4.60E-04	2.00E+00	3.13E-02	1.44E-05	8.00E+01	ND	NC	NC	NC	NC
Pentachlorophenol	X	266	2.10E-06	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
Phenanthrene	X	178	3.90E-05	2.70E+00	3.03E-02	1.18E-06	9.16E+00	ND[4]	NC	NC	NC	NC
Phenol		94	2.70E-07	ND	NC	NC	NC	ND	NC	NC	NC	NC
Pyrene	X	202	1.09E-05	1.30E+00	1.29E-02	1.40E-07	1.23E+00	ND[4]	NC	NC	NC	NC
Styrene	X	104	2.61E-03	ND	NC	NC	NC	94	NC	2.08E-05	7.96E-03	4.14E-01
Tetrachloroethene	X	166	1.53E-02	1.30E+04	1.57E+02	2.40E+00	1.73E+07	ND	NC	NC	NC	NC
Toluene	X	92	6.70E-03	7.60E+00	1.65E-01	1.11E-03	4.43E+03	226.1	1.96E+01	5.65E-05	8.44E-03	3.88E-01
Total xylenes	X	106	6.46E-03	2.30E-01	4.34E-03	2.80E-05	1.29E+02	ND[4]	NC	NC	NC	NC

Attachment 6
Table 9
Small Mammal Burrow Air ECOC Screen

Analyte	OU2 PCOC	Molecular Weight[1] (grams/mole)	Henry's Law Constant[2] (atm m³/mole)	Maximum Detected Concentration in Subsurface Soil[1] (mg/kg)	Molar Concentration in Subsurface Soil[3] (mole/m³)	Partial Pressure (V_p) (atm)	Estimated Concentration in Burrow Air (mg/m³)	Inhalation TRV from IRIS (mg/m³)	Hazard Quotient	Effects Level (atm)	Effects Level in Soil (mole/m³)	Equivalent Effects Level in Soil (mg/kg)
Trichloroethene	X	131	9.10E-03	1.20E+02	1.83E+00	1.67E-02	9.50E+04	ND[4]	NC	NC	NC	NC
alpha-BHC		291	5.30E-06	ND	NC	NC	NC	ND	NC	NC	NC	NC
cis-1,3-Dichloropropene	X	111	1.30E-03	ND	NC	NC	NC	20.9	NC	4.33E-06	3.33E-03	1.85E-01
								HAZARD INDEX	***1.96E+01***			
Mound Area												
1,1,1-Trichloroethane	X	133	1.62E-02	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
1,1,2,2-Tetrachloroethane	X	168	3.80E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
1,1-Dichloroethene		97	1.80E-02	ND	NC	NC	NC	ND	NC	NC	NC	NC
1,2-Dichloroethane	X	99	9.80E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
1,2-Dichloroethene	X	97	7.20E-03	ND	NC	NC	NC	ND	NC	NC	NC	NC
1,4-Dichlorobenzene	X	147	3.10E-03	ND	NC	NC	NC	301	NC	4.71E-05	1.52E-02	1.12E+00
2-Butanone	X	72	4.66E-05	1.90E-02	5.28E-04	2.46E-08	7.70E-02	2978	2.59E-05	9.51E-04	2.04E+01	7.35E+02
2-Chloroethyl vinyl ether	X	107	2.50E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
2-Chlorophenol		129	8.28E-06	ND	NC	NC	NC	ND	NC	NC	NC	NC
2-Methylnaphthalene	X	142	ND	ND	NC	NC	NC	ND	NC	NC	NC	NC
2-Methylphenol	X	108	1.23E-06	ND	NC	NC	NC	ND	NC	NC	NC	NC
4,4'-DDT	X	354	4.89E-05	ND	NC	NC	NC	ND	NC	NC	NC	NC
4-Methyl-2-pentanone	X	100	1.49E-05	3.00E-03	6.00E-05	8.94E-10	3.89E-03	ND[4]	NC	NC	NC	NC
4-Methylphenol	X	108	7.92E-07	ND	NC	NC	NC	ND	NC	NC	NC	NC
4-Nitroaniline	X	138	1.14E-08	ND	NC	NC	NC	ND[5]	NC	NC	NC	NC
Acenaphthene	X	154	1.70E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
Acenaphthylene		152	2.00E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
Acetone	X	58	3.97E-05	2.70E-02	9.31E-04	3.70E-08	9.32E-02	ND	NC	NC	NC	NC
Anthracene	X	178	6.50E-05	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
Aroclor-1254	X	327	2.70E-03	ND	NC	NC	NC	ND	NC	NC	NC	NC
Aroclor-1260		370	7.10E-03	ND	NC	NC	NC	ND	NC	NC	NC	NC
Benzene	X	78	5.40E-03	3.00E-03	7.69E-05	4.15E-07	1.41E+00	ND[4]	NC	NC	NC	NC
Benzo(a)anthracene	X	228	2.30E-06	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
Benzo(a)pyrene	X	252	2.40E-06	ND	NC	NC	NC	ND	NC	NC	NC	NC
Benzo(b)fluoranthene	X	252	1.20E-05	ND	NC	NC	NC	ND	NC	NC	NC	NC
Benzo(ghi)perylene	X	276	1.40E-07	ND	NC	NC	NC	ND	NC	NC	NC	NC
Benzo(k)fluoranthene		252	1.04E-03	ND	NC	NC	NC	ND	NC	NC	NC	NC
Benzoic acid	X	122	7.02E-08	ND	NC	NC	NC	ND	NC	NC	NC	NC
Bis(2-ethylhexyl)phthalate	X	391	1.10E-05	4.90E+00	2.51E-02	2.76E-07	4.69E+00	ND	NC	NC	NC	NC
Butyl benzyl phthalate	X	312	1.30E-06	ND	NC	NC	NC	ND	NC	NC	NC	NC
Carbon disulfide	X	76	1.33E-02	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
Carbon tetrachloride	X	154	2.40E-02	1.50E-02	1.95E-04	4.68E-06	3.13E+01	ND	NC	NC	NC	NC
Chlorobenzene		113	3.93E-03	3.00E-03	5.31E-05	2.09E-07	1.03E+00	ND	NC	NC	NC	NC
Chloroethane	X	65	1.00E-02	ND	NC	NC	NC	4000	NC	1.42E-03	1.42E-01	4.60E+00
Chloroform	X	119	3.23E-03	6.60E-02	1.11E-03	3.58E-06	1.85E+01	ND[4]	NC	NC	NC	NC
Chrysene	X	228	7.26E-02	ND	NC	NC	NC	ND	NC	NC	NC	NC
Di-N-butyl phth[illegible]	X	278	6.30E-05	1.70E-01	1.22E-03	[illegible]7.71E-08	9.31E-01	ND	NC	NC	NC	NC

Attachment 6
Table 9
Small Mammal Burrow Air ECOC Screen

Analyte	OU2 PCOC	Molecular Weight[1] (grams/mole)	Henry's Law Constant[2] (atm m³/mole)	Maximum Detected Concentration in Subsurface Soil[1] (mg/kg)	Molar Concentration in Subsurface Soil[3] (mole/m³)	Partial Pressure (V_p) (atm)	Estimated Concentration in Burrow Air (mg/m³)	Inhalation TRV from IRIS (mg/m³)	Hazard Quotient	Effects Level (atm)	Effects Level in Soil (mole/m³)	Equivalent Effects Level in Soil (mg/kg)
Di-N-octyl phthalate	X	391	1.41E-12	ND	NC	NC	NC	ND[5]	NC	NC	NC	NC
Dibenzo(ah)anthracene		278	7.33E-09	ND	NC	NC	NC	ND	NC	NC	NC	NC
Dibenzofuran		168	ND	ND	NC	NC	NC	ND	NC	NC	NC	NC
Diethyl phthalate		222	8.46E-07	ND	NC	NC	NC	ND	NC	NC	NC	NC
Ethylbenzene	X	106	6.60E-03	ND	NC	NC	NC	434	NC	9.42E-05	1.43E-02	7.56E-01
Fluoranthene	X	202	1.69E-02	1.10E-01	1.09E-03	1.84E-05	1.62E+02	ND[4]	NC	NC	NC	NC
Fluorene	X	166	2.10E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
Heptachlor epoxide		389	3.20E-05	ND	NC	NC	NC	ND	NC	NC	NC	NC
Hexachlorobutadiene	X	261	1.03E-02	ND	NC	NC	NC	ND	NC	NC	NC	NC
Hexachloroethane	X	237	2.50E-03	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
Indeno(1,2,3-cd)pyrene	X	276	2.96E-20	ND	NC	NC	NC	ND	NC	NC	NC	NC
Isophorone		138	5.80E-06	ND	NC	NC	NC	ND	NC	NC	NC	NC
Methylene chloride	X	85	2.00E-03	3.00E-02	7.06E-04	1.41E-06	5.22E+00	ND[4]	NC	NC	NC	NC
N Nitrosodiphenylamine	X	198	2.33E-08	ND	NC	NC	NC	ND	NC	NC	NC	NC
Naphthalene	X	128	4.60E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
Pentachlorophenol	X	266	2.10E-06	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
Phenanthrene	X	178	3.90E-05	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
Phenol		94	2.70E-07	ND	NC	NC	NC	ND	NC	NC	NC	NC
Pyrene	X	202	1.09E-05	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
Styrene	X	104	2.61E-03	ND	NC	NC	NC	94	NC	2.08E-05	7.96E-03	4.14E-01
Tetrachloroethene	X	166	1.53E-02	1.80E-01	2.17E-03	3.32E-05	2.40E+02	ND	NC	NC	NC	NC
Toluene	X	92	6.70E-03	2.20E-01	4.78E-03	3.20E-05	1.28E+02	226.1	5.67E-01	5.65E-05	8.44E-03	3.88E-01
Total xylenes	X	106	6.46E-03	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
Trichloroethene	X	131	9.10E-03	6.70E-02	1.02E-03	9.31E-06	5.30E+01	ND[4]	NC	NC	NC	NC
alpha-BHC		291	5.30E-06	ND	NC	NC	NC	ND	NC	NC	NC	NC
cis-1,3-Dichloropropene	X	111	1.30E-03	ND	NC	NC	NC	20.9	NC	4.33E-06	3.33E-03	1.85E-01
								HAZARD INDEX	***5.67E-01***			
Old Landfill												
1,1,1-Trichloroethane	X	133	1.62E-02	2.00E-03	3.01E-05	4.87E-07	2.82E+00	ND[4]	NC	NC	NC	NC
1,1,2,2-Tetrachloroethane	X	168	3.80E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
1,1-Dichloroethene		97	1.80E-02	ND	NC	NC	NC	ND	NC	NC	NC	NC
1,2-Dichloroethane	X	99	9.80E-04	ND	NC	NC	NC	ND	NC	NC	NC	NC
1,2-Dichloroethene	X	97	7.20E-03	ND	NC	NC	NC	ND	NC	NC	NC	NC
1,4-Dichlorobenzene	X	147	3.10E-03	ND	NC	NC	NC	301	NC	4.71E-05	1.52E-02	1.12E+00
2-Butanone	X	72	4.66E-05	6.90E-02	1.92E-03	8.93E-08	2.80E-01	2978	9.39E-05	9.51E-04	2.04E+01	7.35E+02
2-Chlorophenol		129	8.28E-06	ND	NC	NC	NC	ND	NC	NC	NC	NC
2-Methylnaphthalene	X	142	ND	1.50E+01	2.11E-01	NC	NC	ND	NC	NC	NC	NC
2-Methylphenol	X	108	1.23E-06	ND	NC	NC	NC	ND	NC	NC	NC	NC
4,4'-DDT	X	354	4.89E-05	ND	NC	NC	NC	ND	NC	NC	NC	NC
4-Methyl-2-pentanone	X	100	1.49E-05	2.00E-03	4.00E-05	5.96E-10	2.59E-03	ND[4]	NC	NC	NC	NC
4-Methylphenol	X	108	7.92E-07	ND	NC	NC	NC	ND	NC	NC	NC	NC
4-Nitroaniline	X	138	1.14E-08	ND	NC	NC	NC	ND[5]	NC	NC	NC	NC

Attachment 6
Table 9
Small Mammal Burrow Air ECOC Screen

Analyte	OU2 PCOC	Molecular Weight[1] (grams/mole)	Henry's Law Constant[2] (atm m³/mole)	Maximum Detected Concentration in Subsurface Soil[1] (mg/kg)	Molar Concentration in Subsurface Soil[3] (mole/m³)	Partial Pressure (V_p) (atm)	Estimated Concentration in Burrow Air (mg/m³)	Inhalation TRV from IRIS (mg/m³)	Hazard Quotient	Effects Level (atm)	Effects Level in Soil (mole/m³)	Equivalent Effects Level in Soil (mg/kg)
Acenaphthene	X	154	1.70E-04	3.10E+01	4.03E-01	6.84E-05	4.58E+02	ND	NC	NC	NC	NC
Acenaphthylene		152	2.00E-04	8.40E-02	1.11E-03	2.21E-07	1.46E+00	ND	NC	NC	NC	NC
Acetone	X	58	3.97E-05	2.80E-01	9.66E-03	3.83E-07	9.67E-01	ND	NC	NC	NC	NC
Anthracene	X	178	6.50E-05	4.60E+01	5.17E-01	3.36E-05	2.60E+02	ND[4]	NC	NC	NC	NC
Aroclor-1254	X	327	2.70E-03	9.60E-01	5.87E-03	1.59E-05	2.25E+02	ND	NC	NC	NC	NC
Aroclor-1260		370	7.10E-03	1.30E+00	7.03E-03	4.99E-05	8.03E+02	ND	NC	NC	NC	NC
Benzene	X	78	5.40E-03	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
Benzo(a)anthracene	X	228	2.30E-06	4.80E+01	4.21E-01	9.68E-07	9.60E+00	ND[4]	NC	NC	NC	NC
Benzo(a)pyrene	X	252	2.40E-06	4.30E+01	3.41E-01	8.19E-07	8.98E+00	ND	NC	NC	NC	NC
Benzo(b)fluoranthene	X	252	1.20E-05	4.80E+01	3.81E-01	4.57E-06	5.01E+01	ND	NC	NC	NC	NC
Benzo(ghi)perylene	X	276	1.40E-07	1.10E+01	7.97E-02	1.12E-08	1.34E-01	ND	NC	NC	NC	NC
Benzo(k)fluoranthene		252	1.04E-03	1.90E+01	1.51E-01	1.57E-04	1.72E+03	ND	NC	NC	NC	NC
Benzoic acid	X	122	7.02E-08	4.80E-01	7.87E-03	5.52E-10	2.93E-03	ND	NC	NC	NC	NC
Bis(2 ethylhexyl)phthalate	X	391	1.10E-05	2.90E-01	1.48E-03	1.63E-08	2.77E-01	ND	NC	NC	NC	NC
Butyl benzyl phthalate	X	312	1.30E-06	3.60E-01	2.31E-03	3.00E-09	4.07E-02	ND	NC	NC	NC	NC
Carbon disulfide	X	76	1.33E-02	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
Carbon tetrachloride	X	154	2.40E-02	ND	NC	NC	NC	ND	NC	NC	NC	NC
Chlorobenzene		113	3.93E-03	ND	NC	NC	NC	ND	NC	NC	NC	NC
Chloroethane	X	65	1.00E-02	ND	NC	NC	NC	4000	NC	1.42E-03	1.42E-01	4.60E+00
Chloroform	X	119	3.23E-03	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
Chrysene	X	228	7.26E-02	5.30E+01	4.65E-01	3.38E-02	3.35E+05	ND	NC	NC	NC	NC
Di-N-butyl Phthalate	X	278	6.30E-05	3.00E-01	2.16E-03	1.36E-07	1.64E+00	ND	NC	NC	NC	NC
Di-N-octyl Phthalate	X	391	1.41E-12	ND	NC	NC	NC	ND[5]	NC	NC	NC	NC
Dibenzo(ah)anthracene		278	7.33E-09	5.90E-01	4.24E-03	3.11E-11	3.76E-04	ND	NC	NC	NC	NC
Dibenzofuran		168	ND	2.00E+01	2.38E-01	NC	NC	ND	NC	NC	NC	NC
Diethyl phthalate		222	8.46E-07	ND	NC	NC	NC	ND	NC	NC	NC	NC
Ethylbenzene	X	106	6.60E-03	6.60E-02	1.25E-03	8.22E-06	3.79E+01	434	8.73E-02	9.42E-05	1.43E-02	7.56E-01
Fluoranthene	X	202	1.69E-02	1.10E+02	1.09E+00	1.84E-02	1.62E+05	ND[4]	NC	NC	NC	NC
Fluorene	X	166	2.10E-04	3.50E+01	4.22E-01	8.86E-05	6.39E+02	ND	NC	NC	NC	NC
Heptachlor epoxide		389	3.20E-05	1.10E-02	5.66E-05	1.81E-09	3.06E-02	ND	NC	NC	NC	NC
Hexachlorobutadiene	X	261	1.03E-02	ND	NC	NC	NC	ND	NC	NC	NC	NC
Hexachloroethane	X	237	2.50E-03	ND	NC	NC	NC	ND[4]	NC	NC	NC	NC
Indeno(1,2,3-cd)pyrene	X	276	2.96E-20	1.30E+01	9.42E-02	2.79E-21	3.35E-14	ND	NC	NC	NC	NC
Isophorone		138	5.80E-06	8.20E-02	1.19E-03	6.89E-09	4.14E-02	ND	NC	NC	NC	NC
Methylene chloride	X	85	2.00E-03	3.80E-02	8.94E-04	1.79E-06	6.61E+00	ND[4]	NC	NC	NC	NC
N-Nitrosodiphenylamine	X	198	2.33E-08	ND	NC	NC	NC	ND	NC	NC	NC	NC
Naphthalene	X	128	4.60E-04	6.10E+01	9.53E-01	4.38E-04	2.44E+03	ND	NC	NC	NC	NC
Pentachlorophenol	X	266	2.10E-06	1.60E-01	1.20E-03	2.53E-09	2.92E-02	ND[4]	NC	NC	NC	NC
Phenanthrene	X	178	3.90E-05	1.30E+02	1.46E+00	5.70E-05	4.41E+02	ND[4]	NC	NC	NC	NC
Phenol		94	2.70E-07	1.40E-01	2.98E-03	8.04E-10	3.29E-03	ND	NC	NC	NC	NC
Pyrene	X	202	1.09E-05	8.90E+01	8.81E-01	9.60E-06	8.44E+01	ND[4]	NC	NC	NC	NC
Styrene	X	104	2.61E-03	ND	NC	NC	NC	94	NC	2.08E-05	7.96E-03	4.14E-01

Attachment 6
Table 9
Small Mammal Burrow Air ECOC Screen

Analyte	OU2 PCOC	Molecular Weight[1] (grams/mole)	Henry's Law Constant[2] (atm m³/mole)	Maximum Detected Concentration in Subsurface Soil[1] (mg/kg)	Molar Concentration in Subsurface Soil[3] (mole/m³)	Partial Pressure (V_p) (atm)	Estimated Concentration in Burrow Air (mg/m³)	Inhalation TRV from IRIS (mg/m³)	Hazard Quotient	Effects Level (atm)	Effects Level in Soil (mole/m³)	Equivalent Effects Level in Soil (mg/kg)
Tetrachloroethene	X	166	1.53E-02	9.00E-01	1.08E-02	1.66E-04	1.20E+03	ND	NC	NC	NC	NC
Toluene	X	92	6.70E-03	3.10E-01	6.74E-03	4.52E-05	1.81E+02	226.1	7.99E-01	5.65E-05	8.44E-03	3.88E-01
Total xylenes	X	106	6.46E-03	1.50E-01	2.83E-03	1.83E-05	8.43E+01	ND[4]	NC	NC	NC	NC
Trichloroethene	X	131	9.10E-03	3.90E-01	5.95E-03	5.42E-05	3.09E+02	ND[4]	NC	NC	NC	NC
alpha-BHC		291	5.30E-06	1.50E-02	1.03E-04	5.46E-10	6.91E-03	ND	NC	NC	NC	NC
cis-1,3-Dichloropropene	X	111	1.30E-03	ND	NC	NC	NC	20.9	NC	4.33E-06	3.33E-03	1.85E-01
								HAZARD INDEX	***4.13E+01***			

[1]Source: Draft Final Technical Memorandum No. 9, Chemicals of Concern, Human Health Risk Assessment, 903 Pad, Mound, and East Trenches Areas, Operable Unit No. 2, Rocky Flats Environmental Technology Site, August 1994

[2]Source: Knox *et al* 1993. Subsurface Transport and Fate Processes. Lewis Publishers

[3]Soil density assumed to be 2000 kg/m³

[4]EPA suggested reference concentration is pending

[5]Data under review by EPA

NC - not calculated

ND - no data available

Attachment 6
Table 10
Surface Soil Volatile PCOCs without TRVs

Analyte	Group	OU2 PCOC	Estimated Concentration in Burrow Air (mg/m^3)	Inhalation TRV (mg/m^3)
		903 Pad		
1,1,1-Trichloroethane	V	X	1.41E+01	ND[2]
1,1,2,2-Tetrachloroethane	V	X	NC	ND
1,1-Dichloroethene	V		4.70E+00	ND
1,2-Dichloroethane	V	X	NC	ND
1,2-Dichloroethene	V	X	5.64E+00	ND
2-Chloroethyl vinyl ether	V	X	NC	ND
2-Chlorophenol	S		NC	ND
2-Methylnaphthalene	S	X	NC	ND
2-Methylphenol	S	X	NC	ND
4,4'-DDT	P	X	NC	ND
4-Methyl-2-pentanone	V	X	5.44E+01	ND[2]
4-Methylphenol	S	X	NC	ND
4-Nitroaniline	S	X	NC	ND[1]
Acenaphthene	S	X	9.31E-01	ND
Acenaphthylene	S		NC	ND
Acetone	V	X	4.49E+01	ND
Anthracene	S	X	5.14E-01	ND[2]
Aroclor-1254	P	X	1.39E+03	ND
Aroclor-1260	P		NC	ND
Benzene	V	X	NC	ND[2]
Benzo(a)anthracene	S	X	5.00E-02	ND[2]
Benzo(a)pyrene	S	X	7.31E-02	ND
Benzo(b)fluoranthene	S	X	2.40E-01	ND
Benzo(ghi)perylene	S	X	NC	ND
Benzo(k)fluoranthene	S		NC	ND
Benzoic acid	S	X	NC	ND
Bis(2-ethylhexyl)phthalate	S	X	4.31E+00	ND
Butyl benzyl phthalate	S	X	5.88E-02	ND
Carbon disulfide	V	X	4.63E+00	ND[2]
Carbon tetrachloride	V	X	4.80E+02	ND
Chlorobenzene	V		3.76E+00	ND
Chloroform	V	X	1.77E+04	ND[2]
Chrysene	S	X	1.89E+03	ND
Di-N-butyl phthalate	S	X	3.78E+00	ND
Di-N-octyl phthalate	S	X	9.20E-09	ND[1]
Dibenzo(ah)anthracene	S		NC	ND
Dibenzofuran	S		NC	ND
Diethyl phthalate	S		6.03E-03	ND
Fluoranthene	S	X	6.91E+04	ND[2]
Fluorene	S	X	NC	ND
Heptachlor epoxide	P		NC	ND
Hexachlorobutadiene	S	X	NC	ND

Attachment 6
Table 10
Surface Soil Volatile PCOCs without TRVs

Analyte	Group	OU2 PCOC	Estimated Concentration in Burrow Air (mg/m^3)	Inhalation TRV (mg/m^3)
Hexachloroethane	S	X	NC	ND[2]
Indeno(1,2,3-cd)pyrene	S	X	NC	ND
Isophorone	S		NC	ND
Methylene chloride	V	X	1.57E+03	ND[2]
N-Nitrosodiphenylamine	S	X	NC	ND
Naphthalene	S	X	NC	ND
Pentachlorophenol	S	X	NC	ND[2]
Phenanthrene	S	X	1.42E+02	ND[2]
Phenol	S		NC	ND
Pyrene	S	X	4.83E+01	ND[2]
Tetrachloroethene	V	X	1.46E+02	ND
Total xylenes	V	X	5.00E+01	ND[2]
Trichloroethene	V	X	4.51E+03	ND[2]
alpha-BHC	P		NC	ND
East Trenches				
1,1,1-Trichloroethane	V	X	3.80E+04	ND[2]
1,1,2,2-Tetrachloroethane	V	X	4.30E-01	ND
1,1-Dichloroethene	V		1.41E+01	ND
1,2-Dichloroethane	V	X	NC	ND
1,2-Dichloroethene	V	X	5.64E+01	ND
2-Chloroethyl Vinyl Ether	V	X	NC	ND
2-Chlorophenol	S		NC	ND
2-Methylnaphthalene	S	X	NC	ND
2-Methylphenol	S	X	4.81E-02	ND
4,4'-DDT	P	X	5.95E-01	ND
4-Methyl-2-pentanone	V	X	2.72E-02	ND[2]
4-Methylphenol	S	X	2.00E-01	ND
4-Nitroaniline	S	X	NC	ND[1]
Acenaphthene	S	X	4.14E+00	ND
Acenaphthylene	S		NC	ND
Acetone	V	X	2.97E+02	ND
Anthracene	S	X	1.47E+00	ND[2]
Aroclor-1254	P	X	2.09E+03	ND
Aroclor-1260	P		NC	ND
Benzene	V	X	6.57E+00	ND[2]
Benzo(a)anthracene	S	X	1.06E-01	ND[2]
Benzo(a)pyrene	S	X	1.00E-01	ND
Benzo(b)fluoranthene	S	X	8.56E-01	ND
Benzo(ghi)perylene	S	X	4.38E-03	ND
Benzo(k)fluoranthene	S		NC	ND
Benzoic acid	S	X	2.44E-03	ND
Bis(2-ethylhexyl)phthalate	S	X	5.26E+00	ND

Attachment 6
Table 10
Surface Soil Volatile PCOCs without TRVs

Analyte	Group	OU2 PCOC	Estimated Concentration in Burrow Air (mg/m^3)	Inhalation TRV (mg/m^3)
Butyl benzyl phthalate	S	X	NC	ND
Carbon disulfide	V	X	NC	ND[2]
Carbon tetrachloride	V	X	1.46E+06	ND
Chlorobenzene	V		NC	ND
Chloroform	V	X	2.47E+03	ND[2]
Chrysene	S	X	2.65E+03	ND
Di-N-butyl phthalate	S	X	7.12E+00	ND
Di-N-octyl phthalate	S	X	NC	ND[1]
Dibenzo(ah)anthracene	S		NC	ND
Dibenzofuran	S		NC	ND
Diethyl phthalate	S		1.18E-02	ND
Fluoranthene	S	X	1.47E+03	ND[2]
Fluorene	S	X	3.47E+00	ND
Heptachlor epoxide	P		NC	ND
Hexachlorobutadiene	S	X	1.52E+02	ND
Hexachloroethane	S	X	2.39E+02	ND[2]
Indeno(1,2,3-cd)pyrene	S	X	8.50E-16	ND
Isophorone	S		NC	ND
Methylene chloride	V	X	9.57E+03	ND[2]
N-Nitrosodiphenylamine	S	X	NC	ND
Naphthalene	S	X	8.00E+01	ND
Pentachlorophenol	S	X	NC	ND[2]
Phenanthrene	S	X	9.16E+00	ND[2]
Phenol	S		NC	ND
Pyrene	S	X	1.23E+00	ND[2]
Tetrachloroethene	V	X	1.73E+07	ND
Total xylenes	V	X	1.29E+02	ND[2]
Trichloroethene	V	X	9.50E+04	ND[2]
alpha-BHC	P		NC	ND
Mound Area				
1,1,1-Trichloroethane	V	X	NC	ND[2]
1,1,2,2-Tetrachloroethane	V	X	NC	ND
1,1-Dichloroethene	V		NC	ND
1,2-Dichloroethane	V	X	NC	ND
1,2-Dichloroethene	V	X	NC	ND
2-Chloroethyl vinyl ether	V	X	NC	ND
2-Chlorophenol	S		NC	ND
2-Methylnaphthalene	S	X	NC	ND
2-Methylphenol	S	X	NC	ND
4,4'-DDT	P	X	NC	ND
4-Methyl-2-pentanone	V	X	3.89E-03	ND[2]
4-Methylphenol	S	X	NC	ND

Attachment 6
Table 10
Surface Soil Volatile PCOCs without TRVs

Analyte	Group	OU2 PCOC	Estimated Concentration in Burrow Air (mg/m^3)	Inhalation TRV (mg/m^3)
4-Nitroaniline	S	X	NC	ND[1]
Acenaphthene	S	X	NC	ND
Acenaphthylene	S		NC	ND
Acetone	V	X	9.32E-02	ND
Anthracene	S	X	NC	ND[2]
Aroclor-1254	P	X	NC	ND
Aroclor-1260	P		NC	ND
Benzene	V	X	1.41E+00	ND[2]
Benzo(a)anthracene	S	X	NC	ND[2]
Benzo(a)pyrene	S	X	NC	ND
Benzo(b)fluoranthene	S	X	NC	ND
Benzo(ghi)perylene	S	X	NC	ND
Benzo(k)fluoranthene	S		NC	ND
Benzoic acid	S	X	NC	ND
Bis(2-ethylhexyl)phthalate	S	X	4.69E+00	ND
Butyl benzyl phthalate	S	X	NC	ND
Carbon disulfide	V	X	NC	ND[2]
Carbon tetrachloride	V	X	3.13E+01	ND
Chlorobenzene	V		1.03E+00	ND
Chloroform	V	X	1.85E+01	ND[2]
Chrysene	S	X	NC	ND
Di-N-butyl phthalate	S	X	9.31E-01	ND
Di-N-octyl phthalate	S	X	NC	ND[1]
Dibenzo(ah)anthracene	S		NC	ND
Dibenzofuran	S		NC	ND
Diethyl phthalate	S		NC	ND
Fluoranthene	S	X	1.62E+02	ND[2]
Fluorene	S	X	NC	ND
Heptachlor epoxide	P		NC	ND
Hexachlorobutadiene	S	X	NC	ND
Hexachloroethane	S	X	NC	ND[2]
Indeno(1,2,3-cd)pyrene	S	X	NC	ND
Isophorone	S		NC	ND
Methylene chloride	V	X	5.22E+00	ND[2]
N-Nitrosodiphenylamine	S	X	NC	ND
Naphthalene	S	X	NC	ND
Pentachlorophenol	S	X	NC	ND[2]
Phenanthrene	S	X	NC	ND[2]
Phenol	S		NC	ND
Pyrene	S	X	NC	ND[2]
Tetrachloroethene	V	X	2.40E+02	ND
Total xylenes	V	X	NC	ND[2]

Attachment 6
Table 10
Surface Soil Volatile PCOCs without TRVs

Analyte	Group	OU2 PCOC	Estimated Concentration in Burrow Air (mg/m^3)	Inhalation TRV (mg/m^3)
Trichloroethene	V	X	5.30E+01	ND[2]
alpha-BHC	P		NC	ND
Old Landfill				
1,1,1-Trichloroethane	V	X	2.82E+00	ND[2]
1,1,2,2-Tetrachloroethane	V	X	NC	ND
1,1-Dichloroethene	V		NC	ND
1,2-Dichloroethane	V	X	NC	ND
1,2-Dichloroethene	V	X	NC	ND
2-Chlorophenol	S		NC	ND
2-Methylnaphthalene	S	X	NC	ND
2-Methylphenol	S	X	NC	ND
4,4'-DDT	P	X	NC	ND
4-Methyl-2-pentanone	V	X	2.59E-03	ND[2]
4-Methylphenol	S	X	NC	ND
4-Nitroaniline	S	X	NC	ND[1]
Acenaphthene	S	X	4.58E+02	ND
Acenaphthylene	S		1.46E+00	ND
Acetone	V	X	9.67E-01	ND
Anthracene	S	X	2.60E+02	ND[2]
Aroclor-1254	P	X	2.25E+02	ND
Aroclor-1260	P		8.03E+02	ND
Benzene	V	X	NC	ND[2]
Benzo(a)anthracene	S	X	9.60E+00	ND[2]
Benzo(a)pyrene	S	X	8.98E+00	ND
Benzo(b)fluoranthene	S	X	5.01E+01	ND
Benzo(ghi)perylene	S	X	1.34E-01	ND
Benzo(k)fluoranthene	S		1.72E+03	ND
Benzoic acid	S	X	2.93E-03	ND
Bis(2-ethylhexyl)phthalate	S	X	2.77E-01	ND
Butyl benzyl phthalate	S	X	4.07E-02	ND
Carbon disulfide	V	X	NC	ND[2]
Carbon tetrachloride	V	X	NC	ND
Chlorobenzene	V		NC	ND
Chloroform	V	X	NC	ND[2]
Chrysene	S	X	3.35E+05	ND
Di-N-butyl phthalate	S	X	1.64E+00	ND
Di-N-octyl phthalate	S	X	NC	ND[1]
Dibenzo(ah)anthracene	S		3.76E-04	ND
Dibenzofuran	S		NC	ND
Diethyl phthalate	S		NC	ND
Fluoranthene	S	X	1.62E+05	ND[2]
Fluorene	S	X	5.39E+02	ND
Heptachlor epoxide	P		3.36E-02	ND

Attachment 6
Table 10
Surface Soil Volatile PCOCs without TRVs

Analyte	Group	OU2 PCOC	Estimated Concentration in Burrow Air (mg/m^3)	Inhalation TRV (mg/m^3)
Hexachlorobutadiene	S	X	NC	ND
Hexachloroethane	S	X	NC	ND[2]
Indeno(1,2,3-cd)pyrene	S	X	3.35E-14	ND
Isophorone	S		4.14E-02	ND
Methylene chloride	V	X	6.61E+00	ND[2]
N-Nitrosodiphenylamine	S	X	NC	ND
Naphthalene	S	X	2.44E+03	ND
Pentachlorophenol	S	X	2.92E-02	ND[2]
Phenanthrene	S	X	4.41E+02	ND[2]
Phenol	S		3.29E-03	ND
Pyrene	S	X	8.44E+01	ND[2]
Tetrachloroethene	V	X	1.20E+03	ND
Total xylenes	V	X	8.43E+01	ND[2]
Trichloroethene	V	X	3.09E+02	ND[2]
alpha-BHC	P		6.91E-03	ND

[1]Data under review by EPA
[2]EPA suggested reference concentration is pending
NC - not calculated
ND - no data available

Attachment 6
Table 11
Comparison of Sitewide Maximum Radionuclide Concentrations in Surface Soil to TRVs

Radionuclide PCOC	Sitewide Radionuclide PCOC for Surface Soil	Sitewide Maximum Detected Concentration (pCi/g)	Sitewide Maximum Source Area	Toxicity Reference Value[1] (pCi/g)	Sitewide Maximum Hazard Quotient
Americium-241	X	270	903 Pad	1,900	1.42E-01
Cesium-134	X	0.0880	OU4 Downgradient	84	1.05E-03
Plutonium-239/240	X	7300	903 Pad	3,800	1.92E+00
Radium-226	X	1.34	903 Pad	5.4	2.48E-01
Strontium-89/90	X	1.24	East Trenches	120	1.03E-02
Tritium[2]	X	227	OU4 Downgradient	350,000	6.49E-04
Uranium-233/234	X	2800	Old Landfill	1,800	1.56E+00
Uranium-235	X	670	Old Landfill	1,900	3.53E-01
Uranium-238	X	38000	Old Landfill	1,600	2.38E+01
				HAZARD INDEX	***2.80E+01***

[1]With the exception of Cs-134, benchmarks are from Higley and Kuperman (1995), *Radiological Benchmarks for Wildlife at Rocky Flats Environmental Technology Site*. Toxicity reference value is the ecotoxicological benchmark for small mammals, which represents bounding exposure based on their sensitivity, small home ranges, and continuous contact with soil. Toxicity reference value for Cs-134 is estimated from Cs-137.
[2]Tritium was measured in pCi/L; this screen assumes 1 kg tritium is equivalent to 1 L tritium.
No background comparison was performed because the TRVs are RFETS-specific.
Hazard quotients and hazard indices were rounded to present only three significant figures.

Attachment 6
Table 12
Comparison of Sitewide Maximum Radionuclide Concentrations in Surface Water to TRVs

Radionuclide PCOC	Sitewide Radionuclide PCOC for Surface Water	Sitewide Maximum Detected Concentration[1] (pCi/L)	Sitewide Maximum Source Area	Toxicity Reference Value[1] (pCi/L)	Sitewide Maximum Hazard Quotient
Americium-241	X	15.0	C-Ponds	1,300	1.15E-02
Cesium-137	X	2.00	881 Hillside	8,200	2.44E-04
Plutonium-239/240	X	42.3	903 Pad	100	4.23E-01
Strontium-89/90	X	3.08	881 Hillside	270,000	1.14E-05
Tritium	X	3600	903 Pad	190,000,000	1.89E-05
Uranium-233/234	X	20.0	903 Pad	4,300	4.65E-03
Uranium-235	X	3.03	C-Ponds	4,300	7.05E-04
Uranium-238	X	74.0	Old Landfill	4,400	1.68E-02
				HAZARD INDEX	***4.56E-01***

[1]Total (unfiltered) concentration.
[2]Benchmarks are from Higley and Kuperman (1995), *Radiological Benchmarks for Wildlife at Rocky Flats Environmental Technology Site.*
Toxicity reference value is the ecotoxicological benchmark for aquatic species, which represents bounding exposure based on their sensitivity, and contact with surface water.
No background comparison was performed because the TRVs are RFETS-specific.
Hazard quotients and hazard indices were rounded to present only three significant figures.

Attachment 6
Table 13
Comparison of Sitewide Maximum Radionuclide Concentrations in Sediment to TRVs

Radionuclide PCOC	Sitewide Radionuclide PCOC for Sediment	Sitewide Maximum Detected Concentration (pCi/g)	Sitewide Maximum Source Area	Toxicity Reference Value[1] (pCi/g)	Sitewide Maximum Hazard Quotient
Americium-241	X	389	B-Ponds	46,000	8.47E-03
Cesium-137	X	2.81	B-Ponds	4,800	5.85E-04
Plutonium-239/240	X	643	B-Ponds	520,000	1.24E-03
Radium-226	X	5.64	B-Ponds	380,000	1.48E-05
Radium-228	X	3.41	C-Ponds	250,000	1.36E-05
Strontium-89/90	X	3.94	903 Pad	3,500	1.13E-03
Tritium[2]	X	3.10	Old Landfill	350,000	8.86E-06
Uranium-233/234	X	25.2	B-Ponds	10,000	2.52E-03
Uranium-235	X	1.30	B-Ponds	10,000	1.30E-04
Uranium-238	X	43.1	B-Ponds	4,200	1.03E-02
				HAZARD INDEX	***2.44E-02***

[1]Benchmarks are from Higley and Kuperman (1995), *Radiological Benchmarks for Wildlife at Rocky Flats Environmental Technology Site.* Toxicity reference value is the ecotoxicological benchmark for aquatic species, which represents bounding exposure based on their sensitivity and contact with sediment.
[2]Tritium was measured in pCi/L; this screen assumes 1 kg tritium is equivalent to 1 L tritium.
No background comparison was performed because the TRVs are RFETS-specific.
Hazard quotients and hazard indices were rounded to present only three significant figures.

Attachment 7
June 5, 1995, Meeting Notes

Meeting Minutes
ECOC Selection for the Sitewide Ecological Risk Assessment
June 5, 1995
10:00 am

Attendees: Bonnie Lavelle (EPA), Mark Wickstrom (EPA), Mark Lewis, Ph.D. (Stoller), Katharine Misken, M.S. (Stoller), Frank Vertucci, Ph.D. (EG&G), and Anne Doud White, M.S. (Stoller).

Handouts: 1) background and source area specific summary statistics for abiotic and biotic media, 2) tables of analytes not included in the risk screen, and 3) sitewide risk screen using source area mean HQ for wide-ranging species.

Frank V. opened the meeting by asking that we establish goals and define a process for the ECOC selection.

Goals: Identify ecological contaminants of concern (ECOCs) based on review of preliminary toxicity screening results to determine which potential contaminants of concern (PCOCs) are present at potentially ecotoxic concentrations.

Results for the wide ranging species were reviewed first, then those for the four limiting species: Preble's meadow jumping mouse, great blue heron, American kestrel, and mallard.

For each species:

- Evaluate PCOCs for which risks were calculated
- Evaluate PCOCs for which risks were not calculated
  - Not detected
  - No benchmarks
  - Other data gaps

Based on risk and uncertainty , each of the PCOCs received one of the following designations:

N Chemicals that can be eliminated immediately
Y Chemicals that will be analyzed in the risk assessment as ECOCs
M Chemicals that need further study

Discussion: Those chemicals receiving a (Y) will have risk estimates further defined, possibly using Monte Carlo methods to model exposures. Mark W. requested single point estimates using the UCL_{95} and refined exposure estimates, including factors such as migration. Frank suggested looking at wildlife data, such as bird surveys, for seasonal use and migration information.

*Mark W. said the UCL_{95} is the preferred measure with adequate data. However, if the UCL_{95} is greater than the maximum detected concentration, the maximum detect should be used as the exposure point concentration. He and Bonnie agreed that screening level exposure analysis should be redone adopting this policy. He suggested that we need new tables for all 7 receptors, but only new graphs for the ECOCs.

*Mark W. and Bonnie will each need one complete set of all tables and figures.

Frank asked whether decisions made during the meeting would be final. Mark W. and Bonnie replied that decisions made would be final unless further evidence was introduced.

It was agreed that Frank and Bonnie will speak with U.S. Fish and Wildlife Service (USFWS) to update them on the RFETS Sitewide ERA. Mark W. suggested a meeting with F&W after July 1 to bring them on board.

Mark W. stated that EPA regards the receptors used in the screen as adequate representatives of functional groups at RFETS.

Mark W. wanted to confirm that Stoller followed the site conceptual model from TM2 in exposure calculations. Stoller responded that the conceptual model and exposure parameters were taken from TM2. The species used in the risk screen were agreed upon during informal discussions among EPA, DOE, and EG&G.

Mark W. asked if benchmark development was complete. Mark L. explained that Stoller is still waiting on many vegetation benchmarks, but wildlife benchmarks are as complete as possible. Mark L. explained that Clemson graduate students have conducted a thorough search for vegetation benchmarks, but the body of toxicological research on vegetation is not as complete as that for wildlife and humans.

Mark W. asked how Stoller handled incidental sediment ingestion while drinking. He thought Stoller's method of splitting the ingestion rate evenly between soil and sediment was very conservative but appropriate for this effort.

Mark W. asked if chemicals were grouped where toxicity information was not available. Stoller responded that TEFs (toxicity equivalency factors, Nisbet and Lagoy, 1992) were used for polycyclic aromatic hydrocarbons (PAHs) when no NOAEL was available. For polychlorinated biphenyls (PCBs), benchmark values from the most toxic forms were used when specific information for a given congener was not available.

*Stoller will calculate inhalation risk for Preble's meadow jumping mouse from OU1 881 Hillside, OU5 Old Landfill, and the three OU2 source areas. Stoller will also estimate radiological dose rates and associated risks to small mammals and fish using whole-body tissue data from the site. This information will supplement the benchmark-based risk screen conducted for the watershed ERAs. Mark W. asked if the inhalation pathway would be considered further.

Bonnie does not expect human health risks to drive clean up of the detention ponds at RFETS. Therefore, it will be important to define ecological risks from chemical and physical effects of management practices.

*Frank requested a summary table of why PCOCs are not ECOCs. PCOCs with hazard quotient (HQ) <1 are automatically not ECOCs. PCOCs with HQs >1 are addressed for wildlife in the following text.

*Toxic chemicals without NOAELs will need to be investigated further. Those chemicals requiring more consideration will be determined during this meeting and from EPA review of draft screening results.

I. Evaluation of Wide Ranging Species

Null Hypothesis Chemicals on site are not in sufficient concentration to affect these species (if there is risk to the wide ranging species there will also be risk to the limiting species, i.e. those with restricted home ranges).

A. Chemicals for which risks were calculated

1. Red-tailed hawk

There are no ECOCs for red-tailed hawk, as there is no significant risk to red-tailed hawks sitewide, or within any source area.

Beryllium is not an issue since the HQ>1 (in the Soil Dump Areas) is an artifact of the data situation (the UCL_{95} is greater than the maximum detect). The final document should include a brief summary and table of risk calculations.

2. Mule Deer

There are no mule deer ECOCs, as there is no significant risk to mule deer sitewide, or within any source area.

The maximum HQ is 0.04 (cadmium in the A-Ponds). Vegetation concentrations were estimated using the Travis and Arms equation where necessary and appropriate. The final document should include a brief summary and table of risk calculations.

3. Coyote

There are no ECOCs for coyotes, as there is no significant risk to coyotes sitewide, or within any source area.

Antimony has HQs of 1.91 and 1.81 in A- and B-Ponds, respectively, from 1 hit each of 9 samples. All other analytes' HQ are < 1. The mean antimony HQ is 0.34. Mark W. decided that because the mean HQ_{site} is <1, the frequency of detects is low, the B-Ponds area is only a fraction of the coyotes' home range, and antimony does not biomagnify, this is not an ECOC. The final document should include a brief summary and table of risk calculations.

II. Evaluation of the Four Limiting Species

The following tables present the discussion 6/5/95. Added information in [] brackets was not discussed, but is relevant.

Preble's Meadow Jumping Mouse

The HI is greater than 1 for all source areas except the C-Ponds. Because this is a species of concern, all contaminants with an HQ >1 will be retained for further study.

1. OU6 A-Ponds

This is the highest risk source area.

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU5 PCOC	ECOC	Comments
Vanadium	Yes (veg)	—	—	[Yes]	No	
Magnesium	No (veg)	—	Background	[No]	Maybe	look at dietary requirements for rodents from NRC handbook
Selenium*	No (veg)	—	Background	No	No	look at seed conc. if possible
Molybdenum	Yes (veg)	4/18	—	[Yes]	No	
Arsenic	Yes (veg)	—	—	[Yes]	No	
Mercury	Yes (veg)	5/18	NOAEL	[Yes]	No	TRV is for methyl mercury chloride. Mark W. thought a less bioavailable form would present on site
Cadmium	Yes (veg)	4/18	—	[No]	No	

*Based on vegetation species selected for site availability and importance as forage for herbivores.
Sediment data is for dry sediments from the pond margins.

2. OU6 B-Ponds

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU6 PCOC	ECOC	Comments
Vanadium	Yes (veg)	5/30	—	[Yes]	No	
Selenium	No (veg)	5/22	—	No	No	
Aluminum	No (soil)	30/30	Background	No	No	from clays
Magnesium	No (veg)	30/30	—	[No]	Maybe	compare to nutritional requirements and bioavailability
Arsenic	Yes (veg)	7/22	—	[Yes]	No	
Molybdenum	Yes (veg)	10/30	—	[Yes]	No	
Mercury	Yes (veg)	—	—	[Yes]	No	
Cadmium	No (veg)	15/30	—	[No]	No	

3. OU7 Downgradient Areas

The absence of surface soil, terrestrial arthropod, and surface water data overestimates the importance of vegetation in the diet, and so should be presented as a point of uncertainty.

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU7 PCOC	ECOC	Comments
Selenium	No (veg)	—	—	Yes	Maybe	look at seed storage of Se and plant species collected
Vanadium	Yes (veg)	—	—	Yes	No	
Magnesium	No (veg)	—	—	Yes	Maybe	look at dietary requirements
Molybdenum	Yes (veg)	—	—	[Yes]	No	
Arsenic	Yes (veg)	—	—	[Yes]	No	
Cadmium	Yes (veg)	—	—	[No]	No	

4. OU6 Soil Dump Areas

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU6 PCOC	ECOC	Comments
Selenium	No (veg)	7/12	—	No	No	
Vanadium	Yes (veg)	—	—	[Yes]	No	
Magnesium	No (veg)	—	—	Yes	Maybe	look at dietary requirements
Mercury	approx. equal	1/12	—	Yes	No	look at bioavailability
Cadmium	Yes (veg)	—	—	[No]	No	

5. OU6 Burial Trenches

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU6 PCOC	ECOC	Comments
Vanadium	Yes (veg)	—	—	[Yes]	No	
Selenium	— [(veg]))	—	—	No	No	
Molybdenum	Yes (veg)	—	—	[Yes]	No	
Arsenic	Yes (veg)	—	—	[Yes]	No	
Magnesium	— [(veg)]	—	—	[Yes]	Maybe	look at dietary requirements
Mercury	Yes (veg)	—	—	[Yes]	No	
Cadmium	Yes (veg)	—	—	[No]	No	

6. **OU5 Old Landfill**

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU5 PCOC	ECOC	Comments
Magnesium	— [(veg)]	—	—	No	No	
Arsenic	Yes (veg)	—	—	[No]	No	
Selenium	Yes [(veg)]	—	—	No	No	
Molybdenum	— [(veg)]	—	—	No	No	
Vanadium	— [(veg)]	—	—	No	No	
Cadmium	— [(veg)]	—	—	No	No	

7. **OU6 North Spray Area**

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU6 PCOC	ECOC	Comments
Magnesium	— [(veg)]	6/6	—	[Yes]	Maybe	
Thallium	Yes (veg)	—	—	[No]	No	
Vanadium	Yes (veg)	—	—	[Yes]	No	
Aluminum	—[(veg/soil)]	—	—	No	No	
Barium	— [(veg)]	—	—	[Yes]	Maybe	look at further, bioavailability
Cadmium	Yes (veg)	—	—	No	No	

8. **OU5 Ash Pits**

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU5 PCOC	ECOC	Comments
Vanadium	Yes (veg)	—	—	No	No	
Arsenic	Yes (veg)	—	—	[No]	No	
Magnesium	Yes (veg)	—	—	[No]	No	
Aluminum	—[(veg/soil)]	—	—	No	No	
Mercury	Yes (veg)	—	—	[Yes]	No	

9. **OU2 903 Pad**

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU2 PCOC	ECOC	Comments
Vanadium	Yes (veg)	—	—	[No]	No	

10. **OU2 East Trenches**

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU2 PCOC	ECOC	Comments
Copper	— [(TA)]	—	—	No	No	
Cadmium	— [(TA)]	—	—	No	No	

11. **OU11 881 Hillside**

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU11 PCOC	ECOC	Comments
Selenium	Yes (veg)	3/32	—	[No]	No	
Cadmium	—[(veg/soil)]	—	—	No	No	

12. **OU2 Mound Area**

There were no HQ >1, and HI <1.

B. American Kestrel

1. **OU6 Soil Dump Area**

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU6 PCOC	ECOC	Comments
Beryllium	Yes (SM)	2/6	—	No	No	
Mercury	No (SM)	3/6	NOAEL	Yes	Maybe	TRV from methyl mercury dicyanimide

2. **OU2 East Trenches**

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU2 PCOC	ECOC	Comments
Copper	— [(TA)]	—	—	No	No	
Chromium	No (TA)	—	—	[Yes]	Yes	could be present from cooling tower blowdown
Zinc	— [(TA/SM)]	—	—	No	No	
Lithium	—[(soil)]	—	—	No	No	

3. **OU6 B-Ponds**

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU6 PCOC	ECOC	Comments
Selenium	No (SM)	—	—	No	No	
Vanadium	No (SM)	1/9	—	Yes	Maybe	research detection limits
Magnesium	— (SM)	—	—	Yes	Maybe	Research NRC nutritional guidelines
Aluminum	No (SM)	—	—	No	No	
Lead	No (SM)	5/9	NOAEL	Yes	Yes	TRV based on kestrel
Mercury	No (SM)	2/9	—	Yes	No	background is detection limit, all background are non-detects
Zinc	No (SM)	9/9	background	Yes	No	not an ECOC by BPJ, no biomagnification, essential nutrient per MW

4. **OU2 903 Pad**

May want to think about field work to reduce uncertainty for chromium (903 Pad) and others.

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU2 PCOC	ECOC	Comments
Chromium	-- [(TA)]	1/1	—	Yes	Yes	ECOC due to lack of data

5. **OU6 A-Ponds**

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU6 PCOC	ECOC	Comments
Vanadium	Yes (SM)	1/3	—	Yes	No	
Magnesium	—	—	—	Yes	Maybe	study more, same as above
Lead	No (SM)	—	—	Yes	Yes	
Zinc	No (SM)	9/9	— [background]	Yes	No	BPJ - essential nutrient
Chromium	No (SM)	3/9	—	Yes	Yes	more information

6. **OU1 881 Hillside**

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU1 PCOC	ECOC	Comments
Zinc	— [(TA/SM)]	—	—	No	No	BPJ - essential nutrient

7. **OU7 Downgradient Areas**

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU7 PCOC	ECOC	Comments
Vanadium	Yes (SM)	1/3	—	Yes	No	

8. **OU5 Ash Pits**

This source area has no chemicals with HQ >1.

9. **OU5 Old Landfill**

This source area has no chemicals with HQ >1.

10. **OU2 Mound Area**

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU2 PCOC	ECOC	Comments
Chromium	— ([TA)]	—	—	Yes	Maybe	

11. **OU6 Burial Trenches**

This source area has no chemicals with HQ >1.

12. **OU5 C-Ponds**

This source area has no chemicals with HQ >1.

13. **OU6 North Spray Field**

This source area has no chemicals with HQ >1, and HI <1.

C. Great Blue Heron

1. OU1 881 Hillside

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU1 PCOC	ECOC	Comments
Bis(2-ethylhexyl)phthalate	— [(FI)]	~10%	—	No	Maybe	where was it detected? look at further
Magnesium	— [(FI)]	—	—	No	No	
Aldrin	— [(Sed)]	1/40	—	[No]	No	
Copper	— [(FI)]	—	—	No	No	
Aluminum	— [(Sed)]	—	—	No	No	

2. OU5 C-Ponds

Data on the metabolism of phthalates in fish and birds was requested, if available, to further refine the risk from the phthalates.

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU5 PCOC	ECOC	Comments
Bis(2-ethylhexyl)phthalate	— [(FI)]	2/15	—	[Yes]	Yes	study further
Mercury	No [(FI)]	3/31	—	[Yes]	Yes	
Selenium	—	—	—	No	No	
Copper	No (FI)	24/31	—	Yes	No	realistic exposure factors, no bioaccumulation (BPJ)
Aluminum	— [(Sed)]	—	—	No	No	
Magnesium	— [(Sed)]	—	—	No	No	
Tin	— [(FI)]	—	—	No	No	
Chromium	— [(FI)]	—	—	No	No	

3. **OU6 B-Ponds**

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU6 PCOC	ECOC	Comments
Di-n-butylphthalate	— [(FI)]	—	—	[Yes]	Maybe	study further
Mercury	— [(FI)]	—	—	Yes	Yes	
Magnesium	— [(Sed)]	—	—	Yes	No	will be removed with realistic exposure factors

4. **OU6 A-Ponds**

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU6 PCOC	ECOC	Comments
Di-n-butylphthalate	— [(FI)]	—	—	[Yes]	Maybe	study further
Magnesium	— [(Sed)]	—	—	Yes	No	will be removed with realistic exposure factors
Aluminum	— [(Sed)]	—	—	No	No	

D. Mallard

1. **OU6 A-Ponds**

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU6 PCOC	ECOC	Comments
Di-n-butylphthalate	— [(BeM)]	—	—	[Yes]	Maybe	study further

2. OU5 C-Ponds

Chemical	UCL_{95}>max (primary exposure point media)	Det. Freq.	Basis for TRV	OU5 PCOC	ECOC	Comments
Zinc	—	—	—	[Yes]	No	assumed year round residence, exposure factor is too conservative

3. OU6 B-Ponds

This source area has no chemicals with HQ >1.

The importance of the chemicals for which risks were not calculated must be evaluated. The three reasons chemicals were not analyzed are:

- not detected
- no benchmark
- other data gaps

EPA will review information for these ECOCs and advise DOE of chemicals that need to be included.

III. Evaluation of Surface Water Aquatics

Barium was identified as an (M) ECOC throughout the site. However, the (barium) water quality benchmark may be an artifact of a low literature value.

Stoller will analyze the most recent surface water data (from the last 2 or 3 years) only and identify seasonality and changes in flow regimes if possible. The purpose will be to assess the concentration of physical stressors to effluent or the aquatic community.

IV. Evaluation of Sediments

PAHs appear to be driving risk in sediments. Both PAHs and PCBs require further analysis. Aldrin was identified as a possible (M) ECOC in the A-Ponds. Silver was identified as a (Y) ECOC in the B-Ponds.

*The depth interval of samples used in screening should be investigated. Stoller should identify the spatial distribution of ECOCs both vertically and horizontally if necessary.

Mark W. stated that if the lipophillic chemicals are not detected in the tissue of predators (e.g. bass) then they can be presumed to not be bioaccumulating, and can be eliminated from further consideration. Mark W. asked if there is no AVS (acid volatile sulfide) information available with which to address metal bioavailability. Mark L. answered that there was not.

Mark L. wanted clarification on assessment endpoints. Mark W. suggested top predators or fish-eating birds be a primary basis. Protected and/or sensitive species should also be included. Assessment endpoints will be proposed later in the Problem Formulation.

Data Gaps: An in-situ bioaccumulation study was discussed as a possible way to close data gaps or tissue sampling - possibly with *Chironomus* toxicity tests for benthic macroinvertebrates and fish uptake studies.

*Stoller will perform a literature search for information on toxicity of PCBs and PAHs. PCBs can probably be modeled for fish with existing data.

Benthic invertebrates: PAHs are ECOCs (Y) while aldrin and silver (M) will be studied further and metals will be discussed qualitatively.

Possible sediment endpoints to be used in evaluating effects to aquatic communities or receptors:
- benthic community
- fish
- great blue heron

V. Radionuclides

Bonnie said she had some comments on Higley and Kuperman's (1995) benchmark paper, which she will send over.

Surface soil was the only medium with an HI >1.

ECOCs: None. In the final document Stoller should include the radionuclide screening tables and a paragraph stating there is no risk.

Note: Bonnie sent her list of ECOCs (6/6/95). Listed under rads as (Y) ECOCs were plutonium-239/240, uranium 233/234, and uranium-238.

VI. Phytotoxicity

Mark W. suggested that if there is no obvious toxic impact to vegetation at RFETS, there is no reason to gather site-specific data on phytotoxicity. Vegetation toxicity and effects on communities will be discussed further in the ERA report.

*Review community data and look at wetland areas to further investigate risk to vegetation.

***Indicates action items**

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Attachment 8
Risk Characterization Results

Attachment 8
Table 1
Benthos Taxonomic List
(organism density in number/m^3)

Order	Class	Genus	Species Code	Pond A-1	Pond A-2	Pond A-3	Pond A-4	Pond A-5	Pond B-1	Pond B-2	Pond B-3	Pond B-4	Pond B-5	Pond C-1	Pond C-2	Pond D-1	Pond D-2
Araneae	Arachnida		A1	13													
Coleoptera	Insecta	*Agabinus*	AGA1	13													13
Odonata	Insecta	*Archilestes*	ARC2						13								
Ephemeroptera	Insecta		BA1	143	26				338	13		78					39
Ephemeroptera	Insecta	*Baetis*	BAE1	13					559	39	13	26					
Coleoptera	Insecta		C1						26		13		13				
Copepoda	Crustacea		C2	130		26				52			91				130
Copepoda	Crustacea		C3						91	13			91				
Cladocera	Crustacea		C6	39	130	39			377	299		13	1962				234
Ephemeroptera	Insecta	*Caenis*	CAE1	26	13	13			221	13							251
Diptera	Insecta		CE1	13	13			80	546	195		52					
Diptera	Insecta	Chironomidae	CH1	13				96	13		13					26	52
Diptera	Insecta		CH2	13	299	26	26		26	13		403	117			13	13
Diptera	Insecta	*Orthocladius/Cricoto*	CH3	13									13		1		
Diptera	Insecta		CH5	13					26								52
Diptera	Insecta		CH7	13					13	65							
Diptera	Insecta		CH8	13						13							
Diptera	Insecta	*Chaoborus*	CHA2	104	598	26			130	559	26				7	65	
Diptera	Insecta	*Chironomus*	CHI1	286	6548	3534	1806	704	13	2365	403	11562	4625	2	33	2949	1104
Hemiptera	Insecta	Corixiae G.	CO1	117	13				13	26		13			6	52	
Odonata	Insecta		CO2	104					1351	533							91
Odonata	Insecta	*Coenagrion/Enallagma*	COE1	845	26				195	26							286
Diptera	Insecta	*Corynoneura*	COR1	26					117								26
Diptera	Insecta	*Cricotopus*	CRI1	39				32			130	26					
Diptera	Insecta	*Cryptochironomus*	CRY1				26	272					26	2	2	13	
Diptera	Insecta	*Cryptotendipies*	CRY2	39		13											
Cladocera	Crustacea		DA1								260		13				
Diptera	Insecta	*Dicrotendipes*	DIC1	13	26			32	13	26		13			1		377
Diptera	Insecta	*Endochironomus*	END1			13									1		
Diptera	Insecta	*Glyptotenddipes*	GLY1		52	130									2		156
Limnophila	Gastropoda	*Gyraulus*	GYR1	13					221	13							312
Hirudinea	Oligochaeta		H1	26				56	13	90	13	13					
"Hydracarina"	Arachnoidea		H2	26	26				156	65							
Hemiptera	Insecta	*Trichocorixa*	H3	13											2		
Coleoptera	Insecta	*Haliplus*	HAL1	65					507	234							
Coleoptera	Insecta	*Haliplus*	HAL2	26													
Hemiptera	Insecta	*Hesperocorixa*	HES2								39						
			HYAZ1	195					780	1117	13	91					117
Coleoptera	Insecta	*Hygrotus*	HYG1	13													

Attachment 8
Table 1
Benthos Taxonomic List
(organism density in number/m^3)

Order	Class	Genus	Species Code	Pond A-1	Pond A-2	Pond A-3	Pond A-4	Pond A-5	Pond B-1	Pond B-2	Pond B-3	Pond B-4	Pond B-5	Pond C-1	Pond C-2	Pond D-1	Pond D-2
	Insecta		I1	13					52				13			13	39
Diptera	Insecta	*Labrundinia*	LAB1	13													104
Diptera	Insecta	*Larsia*	LAR1	104	13				78								65
			LWN1			13											
Trichoptera	Insecta		LI1														26
Diptera	Insecta	*Micropsectra*	MIC1	13	52					13		104	52				13
Diptera	Insecta	*Microtendipes*	MIC2	13											1	13	13
			N1	26		26	377		13	13		78					
			NAN1		78												
Diptera	Insecta		NIM1	13					26								
	Oligochaeta		O1	20241	1676	26257	6145	1720	5014	194	4586	17955	16837	42	42	21255	78
Ostracoda	Crustacea		O2	233	13	129	13		2078	2546	49538	1870	2793			26	
Coleoptera	Insecta	*Oreodytes*	ORE1	26	39												
Diptera	Insecta	*Paratanytarsus*	PAR1	26	65				52	39					1		130
Diptera	Insecta	*Parachironomus*	PAR3		13										1		
Diptera	Insecta	*Paratendipes*	PAR6									26					
			PAE7										13				
Coleoptera	Insecta	*Peltodytes*	PEL3							13							
Diptera	Insecta	*Phaenopsectra*	PHA1					48					13				
Limnophila	Gastropoda	*Physella*	PHY1	468	26			8	3820	2326							507
Mollusca	Bivalvia	*Pisidium*	PIS1	91					13	52		13				13	
Limnophila	Gastropoda		PL1						494	104							
Diptera	Insecta	*Polypedilum*	POL1							13					2		13
Diptera	Insecta	*Procladius*	PRO1	91	299	130	117	56				26	234	13	6	78	78
Diptera	Insecta	*Pseudochironomus*	PSE2	273						13							195
Diptera	Insecta	*Psectrocladius*	PSE3	832	299	13			182	13							598
Diptera	Insecta	*Psectrotanypus*	PSE4		13							13					
Diptera	Insecta	*Strictochironomus*	STI1			143		32									
Odonata	Insecta	*Sympetrum*	SYM1	13													
Diptera	Insecta	*Tanypus*	TAN2			26		8				39	13	7		247	26
Diptera	Insecta	*Thienemannimyia grou*	THI1	13						13							13
Ephemeroptera	Insecta	*Tricorythodes*	TRI1							13							
Coleoptera	Insecta	*Tropisternus*	TRO2						13								
Diptera	Insecta	*Tanytarsus*	TAN3					40									
Diptera	Insecta	*Odontomesa*	ODO1					16									
Diptera	Insecta	*Culicoides*	CUL1					8									
Diptera	Insecta	*Cladotanytarsus*	CLA1					816							2		
Diptera	Insecta	*Cladopelma*	CLA2					312									
Mollusca	Bivalvia	*Sphaerium*	SPH1					624									

Attachment 8
Table 1
Benthos Taxonomic List
(organism density in number/m^3)

Order	Class	Genus	Species Code	Pond A-1	Pond A-2	Pond A-3	Pond A-4	Pond A-5	Pond B-1	Pond B-2	Pond B-3	Pond B-4	Pond B-5	Pond C-1	Pond C-2	Pond D-1	Pond D-2
Diptera	Insecta	*Tanytarsus*	TAO1											1			
Diptera	Insecta	Chironomidae	CHPU												1		
Diptera	Insecta	*Tanypus*	TAN1												10		
			Total	**24917**	**10355**	**30557**	**8510**	**4960**	**17590**	**11132**	**55047**	**32414**	**26919**	**66**	**118**	**24763**	**5150**

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Attachment 8

Table 2
Bray-Curtis Percent Dissimilarity Matrix for Sample Site Bethos Species Abundance

A1	**A1**											
A2	0.96	**A2**										
A3	0.96	0.94	**A3**									
A4	0.98	0.84	0.98	**A4**								
B1	0.83	0.94	0.95	0.95	**B1**							
B2	0.98	0.81	0.96	0.88	0.99	**B2**						
B3	0.91	0.93	0.98	0.98	0.89	0.96	**B3**					
B4	0.99	0.95	1.00	0.99	0.99	1.00	1.00	**B4**				
B5	0.88	0.99	0.88	0.99	0.96	1.00	0.97	1.00	**B5**			
C1	0.92	0.81	0.98	0.94	0.93	0.89	0.96	0.89	0.99	**C1**		
C2	0.99	0.98	0.99	0.99	0.99	0.99	0.96	1.00	1.00	0.97	**C2**	
D2	1.00	0.94	0.99	0.95	1.00	0.98	0.93	1.00	1.00	1.00	1.00	**D2**

Table 3
Euclidean Distance Matrix for Sample Site Sediment Hazard Index

A1	**A1**											
A2	138.0	**A2**										
A3	96.0	42.0	**A3**									
A4	142.0	4.0	46.0	**A4**								
A5	139.0	1.0	43.0	3.0	**A5**							
B1	1841.0	1979.0	1937.0	1983.0	1980.0	**B1**						
B2	81.0	57.0	15.0	61.0	58.0	1922.0	**B2**					
B3	21.0	117.0	75.0	121.0	118.0	1862.0	60.0	**B3**				
B4	96.0	234.0	192.0	238.0	235.0	1745.0	177.0	117.0	**B4**			
B5	146.9	8.9	50.9	4.9	7.9	1987.9	65.9	125.9	242.9	**B5**		
C1	152.4	14.4	56.4	10.4	13.4	1993.4	71.4	131.4	248.4	5.5	**C1**	
C2	152.0	14.0	56.0	10.0	13.0	1993.0	71.0	131.0	248.0	5.1	0.4	**C2**

Attachment 8

Table 4
Euclidean Distance Matrix
Sample Site Benthos Richness

A1	**A1**											
A2	24.0	**A2**										
A3	21.0	3.0	**A3**									
A4	41.0	17.0	20.0	**A4**								
A5	29.0	5.0	8.0	12.0	**A5**							
B1	12.0	12.0	9.0	29.0	17.0	**B1**						
B2	13.0	11.0	8.0	28.0	16.0	1.0	**B2**					
B3	36.0	12.0	15.0	5.0	7.0	24.0	23.0	**B3**				
B4	28.0	4.0	7.0	13.0	1.0	16.0	15.0	8.0	**B4**			
B5	31.0	7.0	10.0	10.0	2.0	19.0	18.0	5.0	3.0	**B5**		
C1	42.0	18.0	21.0	1.0	13.0	30.0	29.0	6.0	14.0	11.0	**C1**	
C2	30.0	6.0	9.0	11.0	1.0	18.0	17.0	6.0	2.0	1.0	12.0	**C2**

Table 5
Euclidean Distance Matrix
Sample Site Benthos Density

A1	**A1**											
A2	149.0	**A2**										
A3	53.0	202.0	**A3**									
A4	167.0	18.0	220.0	**A4**								
A5	203.0	54.0	256.0	36.0	**A5**							
B1	77.0	72.0	130.0	90.0	126.0	**B1**						
B2	141.0	8.0	194.0	26.0	62.0	64.0	**B2**					
B3	298.0	447.0	245.0	465.0	501.0	375.0	439.0	**B3**				
B4	72.0	221.0	19.0	239.0	275.0	149.0	213.0	226.0	**B4**			
B5	17.0	166.0	36.0	184.0	220.0	94.0	158.0	281.0	55.0	**B5**		
C1	251.4	102.0	304.0	84.4	48.4	174.4	110.4	549.4	323.4	268.4	**C1**	
C2	250.8	101.8	303.8	83.8	47.8	173.8	109.8	548.8	322.8	267.8	0.6	**C2**

Attachment 8

Table 6
Euclidean Distance Matrix
Sample Site Benthos Diversity

A1	**A1**											
A2	0.30	**A2**										
A3	0.57	0.87	**A3**									
A4	0.29	0.59	0.28	**A4**								
A5	1.00	0.70	1.57	1.29	**A5**							
B1	1.20	0.90	1.77	1.49	0.20	**B1**						
B2	1.10	0.80	1.67	1.39	0.10	0.10	**B2**					
B3	0.78	1.08	0.21	0.49	1.78	1.98	1.88	**B3**				
B4	0.10	0.40	0.47	0.19	1.10	1.30	1.20	0.68	**B4**			
B5	0.10	0.20	0.67	0.39	0.90	1.10	1.00	0.88	0.20	**B5**		
C1	0.00	0.30	0.57	0.29	1.00	1.20	1.10	0.78	0.10	0.10	**C1**	
C2	0.90	0.60	1.47	1.19	0.10	0.30	0.20	1.68	1.00	0.80	0.90	**C2**

Table 7
Euclidean Distance Matrix
Sample Site Benthic Assemblage Tolerance Value

A1	**A1**											
A2	3.66	**A2**										
A3	0.40	3.26	**A3**									
A4	0.95	2.71	0.55	**A4**								
A5	1.69	1.97	1.29	0.74	**A5**							
B1	1.73	1.93	1.33	0.78	0.04	**B1**						
B2	3.19	0.47	2.79	2.24	1.50	1.46	**B2**					
B3	2.81	0.85	2.41	1.86	1.12	1.08	0.38	**B3**				
B4	1.83	1.83	1.43	0.88	0.14	0.10	1.36	0.98	**B4**			
B5	0.47	3.19	0.07	0.48	1.22	1.26	2.72	2.34	1.36	**B5**		
C1	0.87	2.79	0.47	0.08	0.82	0.86	2.32	1.94	0.96	0.40	**C1**	
C2	1.75	1.91	1.35	0.80	0.06	0.02	1.44	1.06	0.08	1.28	0.88	**C2**

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Attachment 9
Sampling Matrices

Attachment 9
Measurement Endpoints Collected During Field Sampling Operations

Environmental Media	Assessment Method	Measurement Endpoint	OU1	OU2	OU3	OU4	OU5	OU6	OU7	IAOU	OU11	EcMP	NRPCP	Baseline	NRDA
Vegetation															
	Plant Cover Transects	species presence/absence	X	X	X	X	X	X	X	X	X	X		X	
		species richness	X	X	X		X	X	X		X	X		X	
		herbaceous cover	X	X	X	X	X	X	X	X	X	X		X	
		herbaceous production	X	X	X		X	X	X		X	X			
		low shrub production	X	X	X		X	X	X		X	X			
		tree and shrub density	X	X	X		X	X	X		X	X		X	
		canopy cover	X	X	X		X	X	X		X	X		X	
		tissue contaminant concentrations	X	X	X		X	X	X		X	X			
Terrestrial Animals															
	Arthropod Sweep Transects	species presence/absence	X	X			X				X	X		X	
		species richness	X	X			X				X	X		X	
		relative abundance	X	X			X				X	X			
		tissue contaminant concentrations	X												
	Soil Invertebrate Surveys	arthropod id & number									X	X			
		nematode id & number									X	X			
		protozoan id & number									X	X			
		mycorrhyzal inoculation potential									X	X			
	Bird Surveys	species presence/absence	X	X	X	X	X	X	X	X	X	X[1]	X	X	
		species richness	X	X	X	X	X	X	X	X	X	X[1]	X	X	
		relative abundance	X		X						X	X[1]	X	X	
		relative density/ha	X	X	X		X	X	X			X[1]	X	X	
		tissue contaminant concentrations													
	Small Mammal Surveys	species presence/absence	X	X	X	X	X	X	X	X	X	X		X	
		species richness	X	X	X	X	X	X	X	X	X	X		X	
		relative abundance	X	X	X	X	X	X	X	X	X	X		X	
		relative density/ha										X			
		tissue contaminant concentrations	X	X	X		X	X	X						
		habitat evaluation										X			
	Large Mammal Surveys	species presence/absence	X	X	X	X	X	X	X	X	X		X	X	
		species richness	X	X		X	X	X	X	X	X		X	X	
		relative abundance	X	X			X	X	X		X		X	X	
		pellets/ha	X	X			X	X	X		X			X	
		tissue contaminant concentrations													

Attachment 9
Measurement Endpoints Collected During Field Sampling Operations

Environmental Media	Assessment Method	Measurement Endpoint	OU1	OU2	OU3	OU4	OU5	OU6	OU7	IAOU	OU11	EcMP	NRPCP	Baseline	NRD
	Amphibian and Reptile Surveys	species presence/absence	X	X	X		X	X	X		X		X	X	
		species richness											X		
		relative abundance											X	X	
		tissue contaminant concentrations													
Aquatic Biota															
	Phytoplankton Surveys	species presence/absence	X	X			X	X	X		X	X		X	
		species richness	X	X			X	X	X		X	X		X	
		relative abundance	X	X			X	X	X		X	X		X	
		relative density/mL									X	X		X	
		biomass													
		biovolume													
	Zooplankton Surveys	species presence/absence						X			X	X		X	
		species richness						X			X	X			
		relative abundance						X			X	X			
		relative density/mL	X					X			X	X			
		biomass	X												
	Periphyton Surveys	species presence/absence	X	X	X		X	X	X			X		X	
		species richness	X	X	X		X	X	X			X		X	
		relative abundance	X	X	X		X	X	X			X		X	
		relative density/mm^2	X	X	X		X	X	X			X		X	
		pigment concentration													
		tissue contaminant concentrations													
	Benthic Macroinvertebrate Surveys	species presence/absence	X	X	X		X	X	X		X	X		X	
		species richness	X	X	X		X	X	X		X	X		X	
		relative abundance	X	X	X		X	X	X		X	X		X	
		relative density/m^2	X	X	X		X	X	X		X	X		X	
		biomass	X	X			X	X	X						
		tissue contaminant concentrations	X	X				X							
	Emergent Insect Surveys	species presence/absence						X			X	X			
		species richness						X			X	X			
		relative abundance						X			X	X			
		relative density/m^2/day						X			X	X			
		tissue contaminant concentrations						X							

Attachment 9
Measurement Endpoints Collected During Field Sampling Operations

Environmental Media	Assessment Method	Measurement Endpoint	OU1	OU2	OU3	OU4	OU5	OU6	OU7	IAOU	OU11	EcMP	NRPCP	Baseline	NRDA
	Fish Surveys	species presence/absence	X	X	X		X	X	X					X	
		species richness	X	X	X		X	X	X					X	
		relative abundance												X	
		tissue contaminant concentrations	X	X	X		X	X	X						
	Toxicity Testing: Water	*Ceriodaphnia* reproduction, survivorship	X	X	X		X	X	X						
		Fathead minnow survivorship	X	X	X		X	X	X						
	Toxicity Testing: Sediment	*Hyallela azteca* growth, survivorship			X		X	X	X						
		Chironomus riparans growth, survivorship					X	X	X						
General Observations															
	Plant Habitat Characterization	mapping	X	X	X	X	X	X	X	X	X			X	
		planimetering	X	X	X	X	X	X	X	X	X			X	
	Featured Species[2]	species presence/absence	X	X	X	X	X	X	X	X	X		X	X	
		habitat use	X	X	X	X	X	X	X	X	X		X	X	
		activities	X	X	X	X	X	X	X	X	X		X	X	
		relative abundance/time	X	X	X	X	X	X	X	X	X		X	X	
	Ecosystem Function	extracted soil nitrate									X	X			
		extracted soil ammonium									X	X			
		total soil nitrogen									X	X			
		soil particulate organic matter									X	X			
		microbial nitrogen									X	X			
		microbial carbon									X	X			
		potential mineralizable nitrogen									X	X			
		potential respirable carbon									X	X			
		nitrogen fixation rate									X	X			
		denitrification rate									X	X			
		soil nutrients									X	X			
		soil metals									X	X			
	EcMP Plant Tissue Concentrations	ash									X	X			
		aluminum									X	X			
		cadmium									X	X			
		calcium									X	X			
		chromium									X	X			
		copper									X	X			

Attachment 9
Measurement Endpoints Collected During Field Sampling Operations

Environmental Media	Assessment Method	Measurement Endpoint	OU1	OU2	OU3	OU4	OU5	OU6	OU7	IAOU	OU11	EcMP	NRPCP	Baseline	NRDA
		iron									X	X			
		lead									X	X			
		magnesium									X	X			
		manganese									X	X			
		molybdenum									X	X			
		phosphorus									X	X			
		potassium									X	X			
		sodium									X	X			
		sulfur									X	X			
		zinc									X	X			

[1]Limited data available.

[2]"Featured species" or "significant species" include large mammals, carnivores, lagomorphs, raptors, muskrats, reptiles, prairie dogs, game birds, threatened, endangered, and special concern species, specific surveys are done for these species, and continuous sightings are recorded.

Attachment 9
Measurement Endpoints Collected During Field Sampling Operations

Environmental Media	Assessment Method	Measurement Endpoint	OU1	OU2	OU3	OU4	OU5	OU6	OU7	IAOU	OU11	EcMP	NRPCP	Baseline	NRDA
Vegetation															
	Plant Cover Transects	species presence/absence	X	X	X	X	X	X	X	X	X	X		X	
		species richness	X	X	X		X	X	X		X	X		X	
		herbaceous cover	X	X	X	X	X	X	X	X	X	X		X	
		herbaceous production	X	X	X		X	X	X		X	X			
		low shrub production	X	X	X		X	X	X		X	X			
		tree and shrub density	X	X	X		X	X	X		X	X		X	
		canopy cover	X	X	X		X	X	X		X	X		X	
		tissue contaminant concentrations	X	X	X		X	X	X		X	X			
Terrestrial Animals															
	Arthropod Sweep Transects	species presence/absence	X	X			X				X	X		X	
		species richness	X	X			X				X	X		X	
		relative abundance	X	X			X				X	X			
		tissue contaminant concentrations	X												
	Soil Invertebrate Surveys	arthropod id & number									X	X			
		nematode id & number									X	X			
		protozoan id & number									X	X			
		mycorrhyzal inoculation potential									X	X			
	Bird Surveys	species presence/absence	X	X	X	X	X	X	X	X	X	X[1]	X	X	
		species richness	X	X	X	X	X	X	X	X	X	X[1]	X	X	
		relative abundance	X		X						X	X[1]	X	X	
		relative density/ha	X	X	X		X	X	X			X[1]	X	X	
		tissue contaminant concentrations													
	Small Mammal Surveys	species presence/absence	X	X	X	X	X	X	X	X	X	X		X	
		species richness	X	X	X	X	X	X	X	X	X	X		X	
		relative abundance	X	X	X	X	X	X	X	X	X	X		X	
		relative density/ha										X			
		tissue contaminant concentrations	X	X	X		X	X	X						
		habitat evaluation										X			
	Large Mammal Surveys	species presence/absence	X	X	X	X	X	X	X	X	X		X	X	
		species richness	X	X		X	X	X	X	X	X		X	X	
		relative abundance	X	X			X	X	X		X		X	X	
		pellets/ha	X	X			X	X	X		X			X	
		tissue contaminant concentrations													

Attachment 9
Measurement Endpoints Collected During Field Sampling Operations

Environmental Media	Assessment Method	Measurement Endpoint	OU1	OU2	OU3	OU4	OU5	OU6	OU7	IAOU	OU11	EcMP	NRPCP	Baseline	NRDA
	Amphibian and Reptile Surveys	species presence/absence	X	X	X		X	X	X		X		X	X	
		species richness											X		
		relative abundance											X	X	
		tissue contaminant concentrations													
Aquatic Biota															
	Phytoplankton Surveys	species presence/absence	X	X			X	X	X		X	X		X	
		species richness	X	X			X	X	X		X	X		X	
		relative abundance	X	X			X	X	X		X	X		X	
		relative density/mL									X	X		X	
		biomass									X	X		X	
		biovolume													
	Zooplankton Surveys	species presence/absence						X			X	X		X	
		species richness						X			X	X			
		relative abundance						X			X	X			
		relative density/mL	X					X			X	X			
		biomass	X												
	Periphyton Surveys	species presence/absence	X	X	X		X	X	X			X		X	
		species richness	X	X	X		X	X	X			X		X	
		relative abundance	X	X	X		X	X	X			X		X	
		relative density/mm^2	X	X	X		X	X	X			X		X	
		pigment concentration													
		tissue contaminant concentrations													
	Benthic Macroinvertebrate Surveys	species presence/absence	X	X	X		X	X	X		X	X		X	
		species richness	X	X	X		X	X	X		X	X		X	
		relative abundance	X	X	X		X	X	X		X	X		X	
		relative density/m^2	X	X	X		X	X	X		X	X		X	
		biomass	X	X			X	X	X						
		tissue contaminant concentrations	X	X				X							
	Emergent Insect Surveys	species presence/absence						X			X	X			
		species richness						X			X	X			
		relative abundance						X			X	X			
		relative density/m^2/day						X			X	X			
		tissue contaminant concentrations						X							

Attachment 9
Measurement Endpoints Collected During Field Sampling Operations

Environmental Media	Assessment Method	Measurement Endpoint	OU1	OU2	OU3	OU4	OU5	OU6	OU7	IAOU	OU11	EcMP	NRPCP	Baseline	NRDA
	Fish Surveys	species presence/absence	X	X	X		X	X	X					X	
		species richness	X	X	X		X	X	X					X	
		relative abundance												X	
		tissue contaminant concentrations	X	X	X		X	X	X						
	Toxicity Testing: Water	*Ceriodaphnia* reproduction, survivorship	X	X	X		X	X	X						
		Fathead minnow survivorship	X	X	X		X	X	X						
	Toxicity Testing: Sediment	*Hyallela azteca* growth, survivorship			X		X	X	X						
		Chironomus riparans growth, survivorship					X	X	X						
General Observations															
	Plant Habitat Characterization	mapping	X	X	X	X	X	X	X	X	X			X	
		planimetering	X	X	X	X	X	X	X	X	X			X	
	Featured Species[2]	species presence/absence	X	X	X	X	X	X	X	X	X		X	X	
		habitat use	X	X	X	X	X	X	X	X	X		X	X	
		activities	X	X	X	X	X	X	X	X	X		X	X	
		relative abundance/time	X	X	X	X	X	X	X	X	X		X	X	
	Ecosystem Function	extracted soil nitrate									X	X			
		extracted soil ammonium									X	X			
		total soil nitrogen									X	X			
		soil particulate organic matter									X	X			
		microbial nitrogen									X	X			
		microbial carbon									X	X			
		potential mineralizable nitrogen									X	X			
		potential respirable carbon									X	X			
		nitrogen fixation rate									X	X			
		denitrification rate									X	X			
		soil nutrients									X	X			
		soil metals									X	X			
	EcMP Plant Tissue Concentrations	ash									X	X			
		aluminum									X	X			
		cadmium									X	X			
		calcium									X	X			
		chromium									X	X			
		copper									X	X			

Attachment 9
Measurement Endpoints Collected During Field Sampling Operations

Environmental Media	Assessment Method	Measurement Endpoint	OU1	OU2	OU3	OU4	OU5	OU6	OU7	IAOU	OU11	EcMP	NRPCP	Baseline	NRDA
		iron									X	X			
		lead									X	X			
		magnesium									X	X			
		manganese									X	X			
		molybdenum									X	X			
		phosphorus									X	X			
		potassium									X	X			
		sodium									X	X			
		sulfur									X	X			
		zinc									X	X			

[1]Limited data available.

[2]"Featured species" or "significant species" include large mammals, carnivores, lagomorphs, raptors, muskrats, reptiles, prairie dogs, game birds, threatened, endangered, and special concern species, specific surveys are done for these species, and continuous sightings are recorded.

APPENDIX O

EVALUATION OF DATA USABILITY

APPENDIX O

EVALUATION OF DATA USABILITY

1.0 INTRODUCTION

Data quality objectives (DQOs) were established in the OU 5 Work Plan (DOE, 1992a) for each analyte group and medium sampled. DQOs are expressed in quantitative and qualitative terms of precision, accuracy, representativeness, completeness, and comparability. These parameters are routinely referred to as the PARCC parameters.

This appendix presents a data quality and usability summary for the OU 5 RFI/RI. The data usability summary evaluates how data quality supports or limits the achievement of the prescribed DQOs, and how it affects data usability for the RFI/RI. Achievement of individual PARCC parameters is described, along with the resulting broad impacts to the data sets used. This discussion of data usability is limited to the data collected during the investigation outlined in the OU 5 Work Plan (DOE, 1992a). These are the data used for the identification of COCs and the risk calculations for the HHRA (Chapter 6.0).

2.0 DATA USABILITY

2.1 DATA VALIDATION

Analytical data were generated using EPA and other well-established methods identified in the *General Radiochemistry and Routine Analytical Services Protocol* (GRRASP; EG&G, 1991). EPA Contract Laboratory Program (CLP) methods and protocols were used in the analysis of target analyte list (TAL) metal parameters and toxic compound list (TCL) organic parameters. Methods for non-CLP analytes, for example, major ions and radionuclides, are based on EPA and other published references. Analytical data were reviewed and validated independently of the laboratory, and the results were documented in data validation reports. EPA functional guidelines for data validation were used for validating organics and metals data for CLP analytes. Non-CLP analytical data were validated using data validation guidelines

developed by the Site Environmental Management Department because such guidelines have not been established by EPA. These non-CLP guidelines are based on EPA validation concepts and tailored to non-CLP analytical methods.

Three classes of data quality are used at the Site: 1) V—Valid and usable without qualification; 2) A—Acceptable for use with qualification(s); and 3) R—Rejected (unacceptable). Valid data meet the following objective standards, where applicable:

*1. analytical methods followed
2. acceptance criteria achieved
3. sufficient number and type of QC samples analyzed
*4. QC limits achieved
*5. compounds and analytes correctly identified
*6. equipment/instrumentation calibration criteria achieved
7. sample holding times met

* primary validation criteria

Data that are acceptable with qualifications meet most, but not all, of the above standards. At the minimum, all of the primary validation criteria are achieved within acceptable limits. Rejected data fail to meet primary validation criteria. As shown in Appendix E for data collected during the TM15 field investigation, analytical results are coded with the appropriate validation code (V, A, or R) based on the results of the data validation. (Data collected during the original OU 5 Work Plan investigation are presented in Appendix B of TM15 (DOE, 1994a).) For the purposes of the OU 5 Phase I RFI/RI, valid and acceptable data were considered of equal utility. Rejected data have not been used in any statistical computations or in the HHRA.

At the time TM15 was prepared, all of the data collected under the original OU 5 Work Plan investigation had not been validated (Table 2.3-8 of DOE, 1994a). Data presented in TM15 (DOE, 1994a) are also those that were used for the identification of COCs and risk calculations for the HHRA. Data that had not been validated were used for the HHRA to provide an adequate quantity of data for conceptual and statistical analysis with an acceptable level of confidence. Subsequent to the preparation of TM15 and the HHRA activities, all of the data collected under the original OU 5 Work Plan investigation were validated. The

following paragraphs discuss results of the validation of these data and possible impacts to conclusions based on these data.

Table O-1 summarizes changes to the data used for the OU 5 HHRA that resulted from the validation process. Only those data points that changed during validation are given on this table. As indicated on Table O-1, the changes in results and/or data quality that resulted from the validation process will not impact the results of the OU 5 HHRA.

Data collected during the TM15 field investigation are used in this chapter, along with data collected under the original OU 5 Work Plan investigation, to evaluate the nature and extent of the COCs. Data from the TM15 investigation, however, were not used for the background comparisons discussed in Section 4.2 or the HHRA Chapter of this report. As of July 11, 1995, approximately 99 percent of the samples collected under the TM15 investigation had been analyzed and 94 percent had been validated.

2.2 PRECISION

Precision is a measure of mutual agreement among individual measurements of the same property, under identical conditions. Precision is assessed by means of laboratory duplicate/field replicate sample analysis. The objective of calculating sampling and analytical precision is to demonstrate that reproducibility of measurements between similar samples is acceptable.

Precision is quantified by calculating the relative percent difference (RPD), i.e., the quotient of the difference between the duplicate analytical results and the average of those results for the given analyte expressed as a percentage according to the following equation:

$$\% \text{ RPD} = 100(C1 - C2)/((C1 + C2)/2)$$

Where: RPD = Relative percent difference

C1 = Concentration or activity of analyte in the sample

C2 = Concentration or activity of analyte in the duplicate.

Field Precision - Procedures for collection of field duplicates are dependent on the medium being sampled. With respect to groundwater and surface-water samples, field duplicates are collected following the actual sample collection using the same sampling technique. For soil samples, it is necessary to obtain splits of the interval being sampled, with the sample and duplicate being collected using the same technique.

As mentioned above, data from sample field duplicates provide a measure of sampling precision and sample homogeneity, i.e., the amount of error in the data attributed to the sampling technique, or to variability in the analyte concentration in the medium being sampled. The field precision objective specified in the Quality Assurance Addendum (QAA) in the OU 5 Work Plan (DOE, 1992a) is to obtain a RPD of ≤ 30 for aqueous samples and ≤ 40 for homogenous, nonaqueous samples. Summaries of the degree to which field precision goals were met for each medium and analyte group are provided in Tables O-2 through O-25.

Tables O-2 through O-5 present summaries of the calculations of field precision for subsurface-soil samples. The percentage of samples that achieved the RPD goal for metals in these samples ranges from 54.2 to 100 percent (Table O-2). Reproducibility of metal concentrations between field duplicates is often difficult to achieve in solid matrices because of the inherent heterogeneous nature of the sampled medium. Similarly, the reproducibility for radionuclides in subsurface-soil samples varied widely (Table O-3). Field precision goals were generally obtained for those radionuclides that are present in relatively high activities (e.g., uranium-233/234 and uranium-238) but were not obtained for those present at lower activities (e.g., americium-241 and plutonium-239/240). Additionally, all results for radionuclides are used regardless of the data qualifier (i.e., there are no nondetects for radionuclides). Therefore, no substitution of radionuclide results with the detection limit or other value is performed. The relatively large variability in low activities leads to low precision for these results.

Due to the very low frequency of detection of organic compounds in subsurface-soil samples (Tables O-4 and O-5), the RPD values for these compounds are greatly affected by the near-detection-limit observations and varying reporting limits presented in RFEDS. Overall, for these compounds, the RPD goal was met for most samples.

The quality of the results for surface-soil samples is similar to that reported for subsurface-soil samples (Tables O-6 through O-10). The frequency with which the RPD goal was met for metals in surface-soil samples varied widely, presumably due to the heterogeneity of the sampled medium (Table O-6). The frequency with which the RPD goal was met for radionuclides in surface-soil samples also varied, and, as was the case with subsurface-soil samples, those radionuclides detected at low activities did not achieve the precision goal as frequently as those present at higher activities (Table O-7). As with subsurface soils, organic compounds were detected infrequently in surface-soil samples, therefore, the RPDs for these compounds were adversely affected by the near-detection-limit concentrations (Tables O-8 through O-10).

Precision results for pond-sediment samples (Tables O-11 through O-15) display the same general trends as those discussed above for other nonaqueous media. The low number (one or two) of field duplicates for pond-sediment samples limits the usefulness of these calculations.

The precision of measurements for aqueous samples (groundwater and surface water) was generally higher than that for nonaqueous samples. This increased precision is expected due to the more homogeneous nature of these media. Tables O-16A through O-20 provide summaries of the precision calculations for groundwater. Summaries of these calculations are provided in Tables O-21A through O-25 for surface-water samples. For both aqueous media, precision for unfiltered (total) samples is generally lower than that reported for filtered (dissolved) samples. The presence of suspended sediment in the unfiltered samples contributes greatly to the variability of concentrations of metals and radionuclides in these samples. As was the case for the nonaqueous samples, the low frequency of detection for organic compounds greatly affected the precision reported for these compounds and the low activities of radionuclides detected in these samples resulted in low precision.

Laboratory Precision - Laboratory precision is evaluated through the use of laboratory duplicates for inorganic analyses and matrix spikes (MS) and matrix spike duplicates (MSD) for organic analyses. Duplicate precision is calculated as RPD; MS/MSD precision is assessed by calculating an RPD between the percent recoveries for the method-specific spiked compounds. Laboratory precision goals are mandated by the analytical method for each analyte group and assessed for achievement during data validation. Data not meeting the precision goals are normally rejected.

A review of data validation results for data used for the OU 5 HHRA indicates that poor analytical precision was not a recurring problem that resulted in data rejection. With the exception of the radiological analyses, data were not rejected due to precision problems; i.e., replicate precision was routinely achieved. Approximately 13 percent of the radiological analyses that were rejected during validation were rejected due to precision-related problems.

In conclusion, inadequate precision was not a factor compromising usability of the RFI/RI data.

2.3 ACCURACY

Accuracy of data obtained in an investigation is a function of the sampling technique, potential for sample contamination, and analytical capabilities of the laboratory. Accuracy means the nearness of a result, or the mean of a set of results, to the true value. Accuracy is assessed by analysis of reference samples of known concentration or activity, percent recoveries for spiked samples, and by review of blank data (i.e., field blanks, trip blanks, method blanks, etc.) that may affect measurement accuracy.

Field Accuracy - Field accuracy is assessed by comparing sample analyte concentrations to those present in associated field quality control (QC) blanks, which include trip blanks, field blanks, and equipment rinsate blanks. Field QC blanks are collected to quantify the analyte concentration in a sample that may be attributable to sampling procedures. The purpose of these field blanks is to detect false positive results in the real sample. During the implementation of the OU 5 Work Plan field investigation, trip blanks and field blanks were not used. Volatile organics, particularly those commonly associated with field or laboratory contamination, such as acetone and methylene chloride, were detected in several samples collected during this investigation. However, with the exception of for seep water, volatile organics were not identified as COCs for any media within OU 5 (see Chapter 6.0). Additionally, the volatile organics detected in seep water are not significant contributors to risk. Because so few volatile organics were detected in real samples, false positives are not a serious concern to this investigation. Therefore, this deficiency in achieving a DQO does not impact the ultimate conclusions based on these data.

Field and trip blanks were used during the TM15 field investigation (Table O-26 summarizes the samples, including all field QC samples collected under the TM15 program). However, because the data collected under the TM15 investigation were not used for the HHRA and are being used to only a limited extent in the RFI/RI, an analysis of the data for these blanks is not included here.

Equipment rinsate blanks were collected throughout all phases of the OU 5 RFI/RI. A few volatile and semi-volatile organic compounds—most commonly acetone, methylene chloride, and phthalates—were detected in some of these samples. The concentrations detected, however, were relatively low (maximum concentration of 10 μg/l). In addition, the fact that these compounds were not identified as COCs for most environmental media within OU 5 suggests that they are not site contaminants.

Comparisons of contract-required quantitation limits (CRQLs) and the concentrations of metals, radionuclides, and water-quality parameters in the equipment rinsate blanks indicate that, with few exceptions, concentrations in these blanks are below the CRQL, indicating the field sample data are not biased due to laboratory- or sampling-introduced contamination. The primary exception is for one rinsate associated with subsurface-soil samples from borehole 57493. This rinsate contained relatively high concentrations of several metals, uranium-233/234, and uranium-238. A comparison of the concentrations of the metals and radionuclides detected in the subsurface-soil samples associated with this rinsate with the range of concentrations detected in subsurface-soil samples from other locations within OU 5 indicates that the concentrations in the samples from borehole 57493 are within the range of OU 5 concentrations. In fact, the concentrations in the samples from borehole 57493 are generally within the range of background concentrations for subsurface soil.

In conclusion, with the few exceptions noted above, the magnitude of concentrations observed in the equipment rinsate blanks are inconsequential in relation to the analyte concentrations in the field samples. Additionally, the absence of volatile organic compounds as COCs for OU 5 supports the conclusion that their detection in field samples is not attributable to site contamination. Therefore, inadequate field accuracy was not a factor compromising the usability of the RFI/RI data.

Laboratory Accuracy - Accuracy of chemical laboratory data is assessed through calculation of percent RPD from MS samples for inorganic analytes, MS/MSD samples for organic analytes, and any in-house or blind certified standards that the laboratory analyzes as part of its ongoing quality assurance/quality control (QA/QC) program. Acceptable recovery for the inorganic MS samples is routinely 75 to 125 percent. Accuracy for organic MS/MSD analyses is mandated by the analytical method for the specific spiked compounds. Use of method blank analyses in the laboratory also assists in assessing analytical accuracy. All of these measures of analytical accuracy are evaluated during the data validation process. When analytical accuracy goals are not achieved, data are normally rejected.

A review of the validation results for the data used for the OU 5 HHRA indicates that rejection of data due to accuracy problems is generally restricted to volatile and semi-volatile organics, pesticides, PCBs, and radionuclides. However, as shown below, only 2.3 percent of the validated data have been rejected for any reason. Therefore, inadequate laboratory accuracy was not a factor compromising the usability of the RFI/RI data.

Analytical Group	Percent Records Rejected
Metals	1.8
Radionuclides	2.7
Organics	2.5
Pesticides/PCBs	3.0
Misc. Analyses	0.1
TOTAL	2.3

2.4 REPRESENTATIVENESS

Representativeness expresses the degree to which sample data accurately and precisely represent a characteristic of a population, parameter variations at a sampling point, or an environmental condition. Representativeness is a qualitative parameter that is most concerned with proper network design, sampling locations, and the sampling methods.

Representativeness of the extent of contamination in OU 5 media is supported by the extensiveness of the phased sampling efforts to characterize the OU. TM15 (DOE, 1994a) was designed based on the data needs identified from prior work related to the Work Plan (DOE, 1992a). Representativeness is considered

in project planning and supported by the Work Plan (DOE, 1992a), subsequent TMs, and associated operating procedures. The plans and procedures are reviewed and approved by the appropriate technical and agency representatives. As a result, the network and sampling design for the Phase I RFI/RI are considered to be representative of site conditions.

Table 1-1 of this report (OU 5 RFI/RI) provides a comparison of the field investigation defined by the IAG and the OU 5 Work Plan, as amended by various TMs, with the actual implementation of the OU 5 RFI/RI. The results on this table indicate that the field investigation generally followed the specifications outlined in the OU 5 Work Plan and the TMs. As discussed in Section 2.6, below, a comparison of the number of sampling locations planned and sampled during this investigation indicates that the field investigation fulfilled the goals of the OU 5 RFI/RI.

2.5 COMPARABILITY

Comparability is used to express the confidence with which one set of data can be compared to another set. Comparability is promoted by using similar sampling and analytical methods and reporting data in uniform units. To achieve comparability of data, all analyses prescribed in the Work Plan and subsequent TMs and performed in support of the Phase I RFI/RI use EPA-accepted or equivalent methods (i.e., all analyses were performed in accordance with the GRRASP [EG&G, 1991]). Comparability of the data supporting the Phase I RFI/RI has also been promoted by using approved and standardized sampling techniques (i.e., Site SOPs were followed for all field investigations).

2.6 COMPLETENESS

The objective for completeness is that the investigation provides enough planned data so that the objectives of the project are met. Completeness for the Phase I RFI/RI is evaluated by comparing the planned to the actual number of samples collected and analyzed. The analytical results should be validated and deemed valid or acceptable to be considered in an assessment of completeness. The overall completeness goal for the project was 90 percent.

It is difficult to quantify completeness in strict accordance with the above-noted guidelines. For example, the frequency of groundwater and surface-water sampling was not specified, the number of samples collected from boreholes is based on the conditions encountered. Therefore, a simpler, albeit less accurate, approach to quantifying completeness has been taken to perform the assessment. Table O-27 summarizes the number of planned sampling locations and the number of locations actually sampled for the investigation defined in the OU 5 Work Plan (DOE, 1992a), as modified by TMs 1 through 10. For the most part, the number of samples collected and types of analyses performed at each sampling location were as specified in the Work Plan and TMs. Samples not collected (or sampling stations not installed) were due to extenuating circumstances such as unexpected hydrogeologic conditions (e.g., insufficient saturated thickness to install a well) and weather (e.g., frozen surface water). As shown on Table O-27, it is estimated that the RFI/RI data are 103 percent complete. This completion rate is greater than 100 percent because several additional sampling locations were added to the OU 5 field program as conditions warranted.

The completeness of the RFI/RI data can also be measured by the percentage of data validated and the percentage rejected during validation. As discussed in Section 2.1 of this appendix, 100 percent of the data used collected under the investigation defined by the OU 5 Work Plan (DOE, 1992a), as modified by TMs 1 through 10, have been validated. The percentage of data rejected during validation was 2.3 percent (see Section 2.3 of this Appendix).

APPENDIX O

TABLES

Table O-1
Summary of Changes Resulting from Validation Process

ANALYTE GROUP	SAMPLE NUMBER	ANALYTE	CHANGE	SUMMARY OF IMPACT
Metals	NA	NA	No changes.	NA
Radionuclides	GW01476WC	Total Gross Alpha	Result changed from 9.50 to 10.20 pCi/l	No impact. Gross alpha used as indicator only. Activity within range for other OU5 samples.
	GW01476WC	Total Gross Beta	Result changed from 5.50 to 5.90 pCi/l	No impact. Gross beta used as indicator only. Activity within range for other OU5 samples.
	SS50122AS, SS50123AS	Uranium-233,234; Uranium-235; and Uranium-238	All records were rejected during validation.	No impact. The activities for these samples were well within the range for other OU5 samples. The deletion of these results may change the 95% UCL for these analytes slightly but would not result in a change in the PCOC/COC identification.
	BH50444AS, BH50540AS, BH50636AS, BH50637AS, BH50643AS, BH50647AS, BH50648AS, BH50585AS	Americium-241	All records rejected during validation.	No impact. Due to very low activities reported (-0.01 to 0.01 pCi/g), the deletion of this result would not affect PCOC/COC identification.
Semi-Volatile Organics	GW01480WC	Bis(2-ethylhexyl)phthalate	Result changed from 3.00 to 10.00 μg/l and result qualifier changed from "JB" to "U".	No impact. The change in result coupled with the change in qualifier results in the result being replaced with 5.0 (1/2 the detection limit) for statistical evaluations and background comparisons. The maximum detected value for this compound used for the COC-screening process was the 3.0 μg/l reported for this sample previously. Because this sample is now classified as a nondetect, the next highest detected concentration would now be less than 3.0 μg/l. Because this compound was not identified as a COC previously, it would not be using the lower concentration.
	GW01480WC	Bis(2-ethylhexyl)phthalate	Result changed from 1.00 to 10.00 μg/l and result qualifier changed from "JB" to "U".	No impact. As discussed above, this change will not impact the conclusions of the HHRA.
Volatile Organics	NA	NA	No changes.	NA
Pesticides/PCBs	GW01476WC	Aroclor-1254	Result changed from 0.70 to 0.71 μg/l.	No impact. Because of the insignificant change in concentrations, no impact to the HHRA results.

Table O-2
Summary of Precision Calculations for Metals in Subsurface-Soil Samples

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 40%	PERCENTAGE WITH RPD <40%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
Aluminum	24	19	79.2%	100.0%	100.0%
Antimony	17	13	76.5%	11.8%	23.5%
Arsenic	24	15	62.5%	95.8%	100.0%
Barium	24	16	66.7%	100.0%	100.0%
Beryllium	24	23	95.8%	37.5%	33.3%
Cadmium	24	19	79.2%	12.5%	58.3%
Calcium	24	17	70.8%	100.0%	100.0%
Cesium	24	24	100.0%	0.0%	0.0%
Chromium	24	16	66.7%	95.8%	87.5%
Cobalt	23	13	56.5%	100.0%	60.9%
Copper	24	17	70.8%	95.8%	95.8%
Iron	24	17	70.8%	100.0%	100.0%
Lead	24	16	66.7%	100.0%	100.0%
Lithium	23	22	95.7%	95.7%	95.7%
Magnesium	24	21	87.5%	100.0%	100.0%
Manganese	24	13	54.2%	100.0%	100.0%
Mercury	12	12	100.0%	25.0%	16.7%
Molybdenum	23	20	87.0%	13.0%	8.7%
Nickel	24	14	58.3%	100.0%	100.0%
Potassium	24	20	83.3%	79.2%	91.7%
Selenium	23	19	82.6%	8.7%	13.0%
Silver	21	20	95.2%	14.3%	4.8%
Sodium	24	22	91.7%	87.5%	87.5%
Strontium	24	20	83.3%	100.0%	100.0%
Thallium	24	20	83.3%	16.7%	25.0%
Tin	24	13	54.2%	0.0%	45.8%
Vanadium	24	17	70.8%	100.0%	100.0%
Zinc	24	18	75.0%	100.0%	100.0%

Table O-3
Summary of Precision Calculations for Radionuclides in Subsurface-Soil Samples

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 40%	PERCENTAGE WITH RPD <40%
Americium-241	24	10	41.7%
Gross Alpha	24	16	66.7%
Gross Beta	24	21	87.5%
Plutonium-239/240	24	7	29.2%
Uranium-233/234	24	22	91.7%
Uranium-235	24	14	58.3%
Uranium-238	24	22	91.7%

Table O-4
Summary of Precision Calculations for Semi-Volatile Organic Compounds in Subsurface-Soil Samples

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 40%	PERCENTAGE WITH RPD <40%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
1,2,4-TRICHLOROBENZENE	6	6	100.0%	0.0%	0.0%
1,2-DICHLOROBENZENE	6	6	100.0%	0.0%	0.0%
1,3-DICHLOROBENZENE	6	6	100.0%	0.0%	0.0%
1,4-DICHLOROBENZENE	6	6	100.0%	0.0%	0.0%
2,4,5-TRICHLOROPHENOL	6	6	100.0%	0.0%	0.0%
2,4,6-TRICHLOROPHENOL	6	6	100.0%	0.0%	0.0%
2,4-DICHLOROPHENOL	6	6	100.0%	0.0%	0.0%
2,4-DIMETHYLPHENOL	6	6	100.0%	0.0%	0.0%
2,4-DINITROPHENOL	5	5	100.0%	0.0%	0.0%
2,4-DINITROTOLUENE	6	6	100.0%	0.0%	0.0%
2,6-DINITROTOLUENE	6	6	100.0%	0.0%	0.0%
2-CHLORONAPHTHALENE	6	6	100.0%	0.0%	0.0%
2-CHLOROPHENOL	6	6	100.0%	0.0%	0.0%
2-METHYLNAPHTHALENE	6	6	100.0%	0.0%	0.0%
2-METHYLPHENOL	6	6	100.0%	16.7%	0.0%
2-NITROANILINE	6	6	100.0%	0.0%	0.0%
2-NITROPHENOL	6	6	100.0%	0.0%	0.0%
3,3'-DICHLOROBENZIDINE	6	6	100.0%	0.0%	0.0%
3-NITROANILINE	6	6	100.0%	0.0%	0.0%
4,6-DINITRO-2-METHYLPHENOL	6	6	100.0%	0.0%	0.0%
4-CHLORO-3-METHYLPHENOL	6	6	100.0%	0.0%	0.0%
4-CHLOROANILINE	6	6	100.0%	0.0%	0.0%
4-CHLOROPHENYL PHENYL ETHI	6	6	100.0%	0.0%	0.0%
4-METHYLPHENOL	6	6	100.0%	0.0%	0.0%
4-NITROANILINE	6	6	100.0%	0.0%	0.0%
4-NITROPHENOL	6	6	100.0%	0.0%	0.0%
ACENAPHTHENE	6	5	83.3%	16.7%	16.7%
ACENAPHTHYLENE	6	6	100.0%	0.0%	0.0%
ANTHRACENE	6	5	83.3%	16.7%	16.7%
BENZO(a)ANTHRACENE	6	5	83.3%	16.7%	16.7%
BENZO(a)PYRENE	6	5	83.3%	16.7%	16.7%
BENZO(b)FLUORANTHENE	6	4	66.7%	16.7%	33.3%
BENZO(ghi)PERYLENE	6	5	83.3%	16.7%	16.7%
BENZO(k)FLUORANTHENE	6	4	66.7%	16.7%	33.3%

Table O-4 (Continued)

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 40%	PERCENTAGE WITH RPD <40%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
BENZYL ALCOHOL	5	5	100.0%	0.0%	0.0%
BIS(2-CHLOROETHOXY)METHAN	6	6	100.0%	0.0%	0.0%
BIS(2-CHLOROETHYL)ETHER	6	6	100.0%	0.0%	0.0%
BIS(2-CHLOROISOPROPYL)ETHEI	6	6	100.0%	0.0%	0.0%
BIS(2-ETHYLHEXYL)PHTHALATE	6	4	66.7%	16.7%	16.7%
BUTYL BENZYL PHTHALATE	6	6	100.0%	0.0%	0.0%
CHRYSENE	6	5	83.3%	16.7%	16.7%
DI-n-BUTYL PHTHALATE	6	6	100.0%	0.0%	0.0%
DI-n-OCTYL PHTHALATE	6	6	100.0%	0.0%	0.0%
DIBENZO(a,h)ANTHRACENE	6	5	83.3%	16.7%	0.0%
DIBENZOFURAN	6	6	100.0%	16.7%	16.7%
DIETHYL PHTHALATE	6	6	100.0%	0.0%	0.0%
DIMETHYL PHTHALATE	6	6	100.0%	0.0%	0.0%
FLUORANTHENE	6	4	66.7%	50.0%	33.3%
FLUORENE	6	5	83.3%	16.7%	16.7%
HEXACHLOROBENZENE	6	6	100.0%	0.0%	0.0%
HEXACHLOROBUTADIENE	6	6	100.0%	0.0%	0.0%
HEXACHLOROCYCLOPENTADIEN	5	5	100.0%	0.0%	0.0%
HEXACHLOROETHANE	6	6	100.0%	0.0%	0.0%
INDENO(1,2,3-cd)PYRENE	6	5	83.3%	16.7%	16.7%
ISOPHORONE	6	6	100.0%	0.0%	0.0%
N-NITROSO-DI-n-PROPYLAMINE	6	6	100.0%	0.0%	0.0%
N-NITROSODIPHENYLAMINE	6	6	100.0%	0.0%	0.0%
NAPHTHALENE	6	5	83.3%	16.7%	0.0%
NITROBENZENE	6	6	100.0%	0.0%	0.0%
p-BROMODIPHENYL ETHER	6	6	100.0%	0.0%	0.0%
PENTACHLOROPHENOL	6	6	100.0%	0.0%	0.0%
PHENANTHRENE	6	3	50.0%	50.0%	33.3%
PHENOL	6	6	100.0%	0.0%	0.0%
PYRENE	6	4	66.7%	50.0%	33.3%

Table O-5
Summary of Precision Calculations for Pesticides and PCBs in Subsurface-Soil Samples

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 40%	PERCENTAGE WITH RPD <40%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
4,4'-DDD	6	6	100.0%	0.0%	0.0%
4,4'-DDE	6	6	100.0%	0.0%	0.0%
4,4'-DDT	6	6	100.0%	0.0%	0.0%
ALDRIN	6	6	100.0%	0.0%	0.0%
alpha-BHC	6	6	100.0%	0.0%	0.0%
alpha-CHLORDANE	6	6	100.0%	0.0%	0.0%
AROCLOR-1016	6	6	100.0%	0.0%	0.0%
AROCLOR-1221	6	6	100.0%	0.0%	0.0%
AROCLOR-1232	5	5	100.0%	0.0%	0.0%
AROCLOR-1242	6	6	100.0%	0.0%	0.0%
AROCLOR-1248	6	6	100.0%	0.0%	0.0%
AROCLOR-1254	6	6	100.0%	0.0%	0.0%
AROCLOR-1260	6	6	100.0%	0.0%	0.0%
beta-BHC	6	6	100.0%	0.0%	0.0%
delta-BHC	6	6	100.0%	0.0%	0.0%
DIELDRIN	6	6	100.0%	0.0%	0.0%
ENDOSULFAN I	6	6	100.0%	0.0%	0.0%
ENDOSULFAN II	6	6	100.0%	0.0%	0.0%
ENDOSULFAN SULFATE	6	6	100.0%	0.0%	0.0%
ENDRIN	6	6	100.0%	0.0%	0.0%
ENDRIN KETONE	6	6	100.0%	0.0%	0.0%
gamma-BHC (LINDANE)	6	6	100.0%	0.0%	0.0%
gamma-CHLORDANE	6	6	100.0%	0.0%	0.0%
HEPTACHLOR	6	6	100.0%	0.0%	0.0%
HEPTACHLOR EPOXIDE	6	6	100.0%	0.0%	0.0%
METHOXYCHLOR	6	6	100.0%	0.0%	0.0%
TOXAPHENE	6	6	100.0%	0.0%	0.0%

Table O-6
Summary of Precision Calculations for Metals in Subsurface-Soil Samples

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 40%	PERCENTAGE WITH RPD <40%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
Aluminum	9	9	100.0%	100.0%	100.0%
Antimony	8	8	100.0%	37.5%	37.5%
Arsenic	9	9	100.0%	100.0%	100.0%
Barium	9	9	100.0%	100.0%	100.0%
Beryllium	9	9	100.0%	77.8%	77.8%
Cadmium	9	9	100.0%	22.2%	33.3%
Calcium	9	9	100.0%	100.0%	100.0%
Cesium	6	6	100.0%	0.0%	0.0%
Chromium	9	9	100.0%	100.0%	100.0%
Cobalt	9	8	88.9%	66.7%	55.6%
Copper	9	8	88.9%	88.9%	88.9%
Iron	9	9	100.0%	100.0%	100.0%
Lead	9	9	100.0%	100.0%	100.0%
Lithium	9	9	100.0%	88.9%	88.9%
Magnesium	9	9	100.0%	100.0%	100.0%
Manganese	9	6	66.7%	100.0%	100.0%
Mercury	9	7	77.8%	44.4%	44.4%
Molybdenum	9	9	100.0%	0.0%	0.0%
Nickel	9	9	100.0%	88.9%	100.0%
Potassium	9	8	88.9%	100.0%	88.9%
Selenium	7	6	85.7%	71.4%	71.4%
Silver	7	7	100.0%	0.0%	0.0%
Sodium	9	8	88.9%	100.0%	88.9%
Strontium	9	9	100.0%	100.0%	100.0%
Thallium	9	8	88.9%	11.1%	22.2%
Tin	9	9	100.0%	0.0%	0.0%
Vanadium	9	9	100.0%	100.0%	100.0%
Zinc	9	9	100.0%	100.0%	100.0%

Table O-7
Summary of Precision Calculations for Radionuclides in Subsurface-Soil Samples

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 40%	PERCENTAGE WITH RPD <40%
Americium-241	9	4	44.4%
Gross Alpha	8	5	62.5%
Gross Beta	8	7	87.5%
Plutonium-238	1	1	100.0%
Plutonium-239/240	10	4	40.0%
Uranium-233/234	10	8	80.0%
Uranium-235	10	5	50.0%
Uranium-238	10	10	100.0%

Table O-8
Summary of Precision Calculations for Semi-Volatile Organic Compounds in Subsurface-Soil Samples

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 40%	PERCENTAGE WITH RPD <40%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
1,2,4-TRICHLOROBENZENE	7	7	100.0%	0.0%	0.0%
1,2-DICHLOROBENZENE	7	7	100.0%	0.0%	0.0%
1,3-DICHLOROBENZENE	7	7	100.0%	0.0%	0.0%
1,4-DICHLOROBENZENE	7	7	100.0%	0.0%	0.0%
2,4,6-TRICHLOROPHENOL	8	8	100.0%	0.0%	0.0%
2,4-DICHLOROPHENOL	4	4	100.0%	0.0%	0.0%
2,4-DIMETHYLPHENOL	4	4	100.0%	0.0%	0.0%
2,4-DINITROPHENOL	4	4	100.0%	0.0%	0.0%
2,4-DINITROTOLUENE	7	7	100.0%	0.0%	0.0%
2,6-DINITROTOLUENE	7	7	100.0%	0.0%	0.0%
2-CHLORONAPHTHALENE	7	7	100.0%	0.0%	0.0%
2-CHLOROPHENOL	4	4	100.0%	0.0%	0.0%
2-METHYLNAPHTHALENE	7	6	85.7%	16.7%	0.0%
2-METHYLPHENOL	4	4	100.0%	0.0%	0.0%
2-NITROANILINE	6	6	100.0%	0.0%	0.0%
2-NITROPHENOL	4	4	100.0%	0.0%	0.0%
3,3'-DICHLOROBENZIDINE	5	5	100.0%	0.0%	0.0%
3-NITROANILINE	4	4	100.0%	0.0%	0.0%
4,6-DINITRO-2-METHYLPHENOL	4	4	100.0%	0.0%	0.0%
4-CHLORO-3-METHYLPHENOL	4	4	100.0%	0.0%	0.0%
4-CHLOROANILINE	6	6	100.0%	0.0%	0.0%
4-CHLOROPHENYL PHENYL ETHER	7	7	100.0%	0.0%	0.0%
4-METHYLPHENOL	4	4	100.0%	0.0%	0.0%
4-NITROANILINE	6	6	100.0%	0.0%	0.0%
4-NITROPHENOL	4	4	100.0%	0.0%	0.0%
ACENAPHTHENE	7	5	71.4%	40.0%	20.0%
ACENAPHTHYLENE	7	7	100.0%	0.0%	0.0%
ANTHRACENE	7	6	85.7%	33.3%	16.7%
BENZO(a)ANTHRACENE	7	4	57.1%	75.0%	75.0%
BENZO(a)PYRENE	7	7	100.0%	42.9%	28.6%
BENZO(b)FLUORANTHENE	7	4	57.1%	75.0%	75.0%
BENZO(ghi)PERYLENE	5	4	80.0%	25.0%	25.0%
BENZO(k)FLUORANTHENE	7	7	100.0%	28.6%	28.6%
BENZOIC ACID	4	4	100.0%	25.0%	25.0%
BENZYL ALCOHOL	4	4	100.0%	0.0%	0.0%

Table O-8 (Continued)

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 40%	PERCENTAGE WITH RPD <40%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
1,2,4-TRICHLOROBENZENE	7	7	100.0%	0.0%	0.0%
BIS(2-CHLOROETHYL)ETHER	7	7	100.0%	0.0%	0.0%
BIS(2-CHLOROISOPROPYL)ETHER	4	4	100.0%	0.0%	0.0%
BIS(2-ETHYLHEXYL)PHTHALATE	7	6	85.7%	16.7%	16.7%
BUTYL BENZYL PHTHALATE	7	7	100.0%	0.0%	0.0%
CHRYSENE	7	4	57.1%	100.0%	100.0%
DI-n-BUTYL PHTHALATE	7	6	85.7%	16.7%	0.0%
DI-n-OCTYL PHTHALATE	7	7	100.0%	0.0%	0.0%
DIBENZO(a,h)ANTHRACENE	6	6	100.0%	16.7%	16.7%
DIBENZOFURAN	7	6	85.7%	16.7%	0.0%
DIETHYL PHTHALATE	7	7	100.0%	0.0%	0.0%
DIMETHYL PHTHALATE	7	7	100.0%	0.0%	0.0%
FLUORANTHENE	7	6	85.7%	83.3%	66.7%
FLUORENE	7	5	71.4%	40.0%	20.0%
HEXACHLOROBENZENE	6	6	100.0%	0.0%	0.0%
HEXACHLOROBUTADIENE	7	7	100.0%	0.0%	0.0%
HEXACHLOROCYCLOPENTADIENE	7	7	100.0%	0.0%	0.0%
HEXACHLOROETHANE	7	7	100.0%	0.0%	0.0%
INDENO(1,2,3-cd)PYRENE	6	5	83.3%	40.0%	40.0%
ISOPHORONE	7	7	100.0%	0.0%	0.0%
N-NITROSO-DI n-PROPYLAMINE	7	7	100.0%	0.0%	0.0%
N-NITROSODIPHENYLAMINE	7	7	100.0%	0.0%	0.0%
NAPHTHALENE	7	6	85.7%	16.7%	16.7%
NITROBENZENE	6	6	100.0%	0.0%	0.0%
PENTACHLOROPHENOL	4	4	100.0%	0.0%	0.0%
PHENANTHRENE	7	3	42.9%	57.0%	57.0%
PHENOL	4	4	100.0%	0.0%	0.0%
PYRENE	7	3	42.9%	71.0%	57.0%
p-BROMODIPHENYL ETHER	7	7	100.0%	0.0%	0.0%

Table O-9
Summary of Precision Calculations for PAHs in Subsurface-Soil Samples

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 40%	PERCENTAGE WITH RPD <40%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
ACENAPHTHYLENE	2	2	100.0%	0.0%	0.0%
ANTHRACENE	2	2	100.0%	0.0%	0.0%
BENZO(a)PYRENE	1	1	100.0%	0.0%	0.0%
BENZO(ghi)PERYLENE	1	1	100.0%	0.0%	0.0%
CHRYSENE	2	2	100.0%	0.0%	0.0%
FLUORENE	1	1	100.0%	0.0%	0.0%
NAPHTHALENE	2	2	100.0%	0.0%	0.0%
PHENANTHRENE	2	2	100.0%	0.0%	0.0%
PYRENE	2	2	100.0%	0.0%	0.0%

Table O-10
Summary of Precision Calculations for Pesticides and PCBs in Subsurface-Soil Samples

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 40%	PERCENTAGE WITH RPD <40%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
4,4'-DDD	7	7	100.0%	0.0%	0.0%
4,4'-DDE	7	7	100.0%	0.0%	0.0%
4,4'-DDT	7	7	100.0%	0.0%	0.0%
ALDRIN	7	7	100.0%	0.0%	0.0%
AROCLOR-1016	7	7	100.0%	0.0%	0.0%
AROCLOR-1221	7	7	100.0%	0.0%	0.0%
AROCLOR-1232	7	7	100.0%	0.0%	0.0%
AROCLOR-1242	7	7	100.0%	0.0%	0.0%
AROCLOR-1248	7	7	100.0%	0.0%	0.0%
AROCLOR-1254	7	6	85.7%	28.6%	28.6%
AROCLOR-1260	7	7	100.0%	0.0%	0.0%
DIELDRIN	7	7	100.0%	0.0%	0.0%
ENDOSULFAN I	7	7	100.0%	0.0%	0.0%
ENDOSULFAN II	7	7	100.0%	0.0%	0.0%
ENDOSULFAN SULFATE	7	7	100.0%	0.0%	0.0%
ENDRIN	7	7	100.0%	0.0%	0.0%
ENDRIN KETONE	7	7	100.0%	0.0%	0.0%
HEPTACHLOR	7	7	100.0%	0.0%	0.0%
HEPTACHLOR EPOXIDE	7	7	100.0%	0.0%	0.0%
METHOXYCHLOR	7	7	100.0%	0.0%	0.0%
TOXAPHENE	7	7	100.0%	0.0%	0.0%
alpha-BHC	7	7	100.0%	0.0%	0.0%
alpha-CHLORDANE	6	6	100.0%	0.0%	0.0%
beta-BHC	7	7	100.0%	0.0%	0.0%
delta-BHC	7	7	100.0%	0.0%	0.0%
gamma-BHC (LINDANE)	7	7	100.0%	0.0%	0.0%
gamma-CHLORDANE	7	7	100.0%	0.0%	0.0%

Table O-11
Summary of Precision Calculations for Metals in Pond-Sediments

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 40%	PERCENTAGE WITH RPD <40%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
Aluminum	2	1	50.0%	100.0%	100.0%
Antimony	1	1	100.0%	0.0%	0.0%
Arsenic	2	1	50.0%	100.0%	100.0%
Barium	2	1	50.0%	100.0%	100.0%
Beryllium	1	0	0.0%	100.0%	0.0%
Cadmium	1	1	100.0%	0.0%	0.0%
Calcium	2	1	50.0%	100.0%	100.0%
Chromium	2	1	50.0%	100.0%	100.0%
Cobalt	1	0	0.0%	100.0%	100.0%
Copper	2	1	50.0%	100.0%	100.0%
Iron	2	1	50.0%	100.0%	100.0%
Lead	2	0	0.0%	100.0%	100.0%
Lithium	1	0	0.0%	100.0%	100.0%
Magnesium	2	1	50.0%	100.0%	100.0%
Manganese	2	1	50.0%	100.0%	100.0%
Mercury	2	0	0.0%	100.0%	100.0%
Molybdenum	1	1	100.0%	0.0%	0.0%
Nickel	2	1	50.0%	50.0%	50.0%
Potassium	2	1	50.0%	100.0%	100.0%
Selenium	1	1	100.0%	100.0%	100.0%
Silver	2	2	100.0%	50.0%	50.0%
Sodium	2	1	50.0%	100.0%	100.0%
Strontium	2	1	50.0%	100.0%	100.0%
Thallium	1	1	100.0%	0.0%	0.0%
Tin	2	2	100.0%	0.0%	0.0%
Vanadium	2	1	50.0%	100.0%	100.0%
Zinc	1	0	0.0%	100.0%	100.0%

TABLE O-12
Summary of Precision Calculations for Radionuclides in Pond-Sediments

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 40%	PERCENTAGE WITH RPD <40%
Americium-241	3	3	100.0%
Gross Alpha	3	2	66.7%
Gross Beta	3	3	100.0%
Plutonium-239/240	3	3	100.0%
Tritium	3	1	33.3%
Uranium-233/234	2	2	100.0%
Uranium-235	2	1	50.0%
Uranium-238	2	2	100.0%

Table O-13
Summary of Precision Calculations for Semi-Volatile Organics in Pond-Sediments

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 40%	PERCENTAGE WITH RPD <40%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
1,2,4-TRICHLOROBENZENE	1	1	100.0%	0.0%	0.0%
1,2-DICHLOROBENZENE	1	1	100.0%	0.0%	0.0%
1,3-DICHLOROBENZENE	1	1	100.0%	0.0%	0.0%
1,4-DICHLOROBENZENE	1	1	100.0%	0.0%	0.0%
2,4,5-TRICHLOROPHENOL	1	1	100.0%	0.0%	0.0%
2,4,6-TRICHLOROPHENOL	1	1	100.0%	0.0%	0.0%
2,4-DICHLOROPHENOL	1	1	100.0%	0.0%	0.0%
2,4-DIMETHYLPHENOL	1	1	100.0%	0.0%	0.0%
2,4-DINITROPHENOL	1	1	100.0%	0.0%	0.0%
2,4-DINITROTOLUENE	1	1	100.0%	0.0%	0.0%
2,6-DINITROTOLUENE	1	1	100.0%	0.0%	0.0%
2-CHLORONAPHTHALENE	1	1	100.0%	0.0%	0.0%
2-CHLOROPHENOL	1	1	100.0%	0.0%	0.0%
2-METHYLNAPHTHALENE	1	1	100.0%	0.0%	0.0%
2-METHYLPHENOL	1	1	100.0%	0.0%	0.0%
2-NITROANILINE	1	1	100.0%	0.0%	0.0%
2-NITROPHENOL	1	1	100.0%	0.0%	0.0%
3,3'-DICHLOROBENZIDINE	1	1	100.0%	0.0%	0.0%
3-NITROANILINE	1	1	100.0%	0.0%	0.0%
4,6-DINITRO-2-METHYLPHENOL	1	1	100.0%	0.0%	0.0%
4-CHLORO-3-METHYLPHENOL	1	1	100.0%	0.0%	0.0%
4-CHLOROANILINE	1	1	100.0%	0.0%	0.0%
4-CHLOROPHENYL PHENYL ETHER	1	1	100.0%	0.0%	0.0%
4-METHYLPHENOL	1	1	100.0%	0.0%	0.0%
4-NITROANILINE	1	1	100.0%	0.0%	0.0%
4-NITROPHENOL	1	1	100.0%	0.0%	0.0%
ACENAPHTHENE	1	1	100.0%	0.0%	0.0%
ACENAPHTHYLENE	1	1	100.0%	0.0%	0.0%
ANTHRACENE	1	1	100.0%	0.0%	0.0%
BENZO(a)ANTHRACENE	1	1	100.0%	0.0%	0.0%
BENZO(a)PYRENE	1	1	100.0%	0.0%	0.0%
BENZO(b)FLUORANTHENE	1	1	100.0%	0.0%	0.0%
BENZO(ghi)PERYLENE	1	1	100.0%	0.0%	0.0%

Table O-13 (Continued)

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 40%	PERCENTAGE WITH RPD <40%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
BENZOIC ACID	1	1	100.0%	100.0%	100.0%
BENZYL ALCOHOL	1	1	100.0%	0.0%	0.0%
BIS(2-CHLOROETHOXY)METHANE	1	1	100.0%	0.0%	0.0%
BIS(2-CHLOROETHYL)ETHER	1	1	100.0%	0.0%	0.0%
BIS(2-CHLOROISOPROPYL)ETHER	1	1	100.0%	0.0%	0.0%
BIS(2-ETHYLHEXYL)PHTHALATE	1	1	100.0%	0.0%	0.0%
BUTYL BENZYL PHTHALATE	1	1	100.0%	0.0%	0.0%
CHRYSENE	1	1	100.0%	0.0%	0.0%
DI-n-BUTYL PHTHALATE	1	1	100.0%	0.0%	0.0%
DI-n-OCTYL PHTHALATE	1	1	100.0%	0.0%	0.0%
DIBENZO(a,h)ANTHRACENE	1	1	100.0%	0.0%	0.0%
DIBENZOFURAN	1	1	100.0%	0.0%	0.0%
DIETHYL PHTHALATE	1	1	100.0%	0.0%	0.0%
DIMETHYL PHTHALATE	1	1	100.0%	0.0%	0.0%
FLUORANTHENE	1	1	100.0%	0.0%	0.0%
FLUORENE	1	1	100.0%	0.0%	100.0%
HEXACHLOROBENZENE	1	1	100.0%	0.0%	0.0%
HEXACHLOROBUTADIENE	1	1	100.0%	0.0%	0.0%
HEXACHLOROCYCLOPENTADIENE	1	1	100.0%	0.0%	0.0%
HEXACHLOROETHANE	1	1	100.0%	0.0%	0.0%
INDENO(1,2,3-cd)PYRENE	1	1	100.0%	0.0%	0.0%
ISOPHORONE	1	1	100.0%	0.0%	0.0%
N-NITROSO-DI-n-PROPYLAMINE	1	1	100.0%	0.0%	0.0%
N-NITROSODIPHENYLAMINE	1	1	100.0%	0.0%	0.0%
NAPHTHALENE	1	1	100.0%	0.0%	0.0%
NITROBENZENE	1	1	100.0%	0.0%	0.0%
p-BROMODIPHENYL ETHER	1	1	100.0%	0.0%	0.0%
PENTACHLOROPHENOL	1	1	100.0%	0.0%	0.0%
PHENANTHRENE	1	0	0.0%	0.0%	100.0%
PHENOL	1	1	100.0%	0.0%	0.0%
PYRENE	1	0	0.0%	0.0%	100.0%

Table O-14
Summary of Precision Calculations for Volatile Organics in Pond-Sediments

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 40%	PERCENTAGE WITH RPD <40%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
1,1,1-TRICHLOROETHANE	1	1	100.0%	0.0%	0.0%
1,1,2,2-TETRACHLOROETHANE	1	1	100.0%	0.0%	0.0%
1,1,2-TRICHLOROETHANE	1	1	100.0%	0.0%	0.0%
1,1-DICHLOROETHANE	1	1	100.0%	0.0%	0.0%
1,1-DICHLOROETHENE	1	1	100.0%	0.0%	0.0%
1,2-DICHLOROETHANE	1	1	100.0%	0.0%	0.0%
1,2-DICHLOROETHENE	1	1	100.0%	0.0%	0.0%
1,2-DICHLOROPROPANE	1	1	100.0%	0.0%	0.0%
2-HEXANONE	1	1	100.0%	0.0%	0.0%
4-METHYL-2-PENTANONE	1	1	100.0%	0.0%	0.0%
ACETONE	1	1	100.0%	0.0%	0.0%
BENZENE	1	1	100.0%	0.0%	0.0%
BROMODICHLOROMETHANE	1	1	100.0%	0.0%	0.0%
BROMOFORM	1	1	100.0%	0.0%	0.0%
BROMOMETHANE	1	1	100.0%	0.0%	0.0%
CARBON DISULFIDE	1	1	100.0%	0.0%	0.0%
CARBON TETRACHLORIDE	1	1	100.0%	0.0%	0.0%
CHLOROBENZENE	1	1	100.0%	0.0%	0.0%
CHLOROETHANE	1	1	100.0%	0.0%	0.0%
CHLOROFORM	1	1	100.0%	0.0%	0.0%
CHLOROMETHANE	1	1	100.0%	0.0%	0.0%
DIBROMOCHLOROMETHANE	1	1	100.0%	0.0%	0.0%
ETHYLBENZENE	1	1	100.0%	0.0%	0.0%
METHYLENE CHLORIDE	1	1	100.0%	0.0%	0.0%
STYRENE	1	1	100.0%	0.0%	0.0%
TETRACHLOROETHENE	1	1	100.0%	0.0%	0.0%
TOLUENE	1	1	100.0%	0.0%	0.0%
TOTAL XYLENES	1	1	100.0%	100.0%	100.0%
TRICHLOROETHENE	1	1	100.0%	0.0%	0.0%
VINYL ACETATE	1	1	100.0%	0.0%	0.0%
VINYL CHLORIDE	1	1	100.0%	0.0%	0.0%
cis-1,3-DICHLOROPROPENE	1	1	100.0%	0.0%	0.0%
trans-1,3-DICHLOROPROPENE	1	1	100.0%	0.0%	0.0%

Table O-15
Summary of Precision Calculations for Pesticides and PCBs in Pond-Sediments

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 40%	PERCENTAGE WITH RPD <40%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
4,4'-DDD	1	1	100.0%	0.0%	0.0%
4,4'-DDE	1	1	100.0%	0.0%	0.0%
4,4'-DDT	1	1	100.0%	0.0%	0.0%
ALDRIN	1	1	100.0%	0.0%	0.0%
AROCLOR-1016	1	1	100.0%	0.0%	0.0%
AROCLOR-1221	1	1	100.0%	0.0%	0.0%
AROCLOR-1232	1	1	100.0%	0.0%	0.0%
AROCLOR-1242	1	1	100.0%	0.0%	0.0%
AROCLOR-1248	1	1	100.0%	0.0%	0.0%
AROCLOR-1254	1	1	100.0%	0.0%	0.0%
AROCLOR-1260	1	1	100.0%	0.0%	0.0%
DIELDRIN	1	1	100.0%	0.0%	0.0%
ENDOSULFAN I	1	1	100.0%	0.0%	0.0%
ENDOSULFAN II	1	1	100.0%	0.0%	0.0%
ENDOSULFAN SULFATE	1	1	100.0%	0.0%	0.0%
ENDRIN	1	1	100.0%	0.0%	0.0%
ENDRIN KETONE	1	1	100.0%	0.0%	0.0%
HEPTACHLOR	1	1	100.0%	0.0%	0.0%
HEPTACHLOR EPOXIDE	1	1	100.0%	0.0%	0.0%
METHOXYCHLOR	1	1	100.0%	0.0%	0.0%
TOXAPHENE	1	1	100.0%	0.0%	0.0%
alpha-BHC	1	1	100.0%	0.0%	0.0%
alpha-CHLORDANE	1	1	100.0%	0.0%	0.0%
beta-BHC	1	1	100.0%	0.0%	0.0%
delta-BHC	1	1	100.0%	0.0%	0.0%
gamma-BHC (LINDANE)	1	1	100.0%	0.0%	0.0%
gamma-CHLORDANE	1	1	100.0%	0.0%	0.0%

Table O-16A
Summary of Precision Calculations for Total Metals in Groundwater

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 30%	PERCENTAGE WITH RPD <30%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
Aluminum	10	5	50.0%	90.0%	90.0%
Antimony	10	10	100.0%	0.0%	0.0%
Arsenic	10	8	80.0%	70.0%	80.0%
Barium	10	8	80.0%	100.0%	100.0%
Beryllium	10	9	90.0%	10.0%	20.0%
Cadmium	10	10	100.0%	0.0%	0.0%
Calcium	10	9	90.0%	100.0%	100.0%
Cesium	10	10	100.0%	10.0%	10.0%
Chromium	10	8	80.0%	30.0%	30.0%
Cobalt	10	9	90.0%	20.0%	20.0%
Copper	10	9	90.0%	60.0%	60.0%
Iron	10	7	70.0%	90.0%	90.0%
Lead	10	7	70.0%	50.0%	60.0%
Lithium	10	10	100.0%	30.0%	30.0%
Magnesium	10	9	90.0%	100.0%	100.0%
Manganese	10	9	90.0%	100.0%	100.0%
Mercury	10	10	100.0%	10.0%	10.0%
Molybdenum	10	10	100.0%	0.0%	0.0%
Nickel	10	8	80.0%	40.0%	50.0%
Potassium	10	9	90.0%	60.0%	60.0%
Selenium	10	9	90.0%	40.0%	20.0%
Silicon	10	9	90.0%	100.0%	100.0%
Silver	10	10	100.0%	0.0%	0.0%
Sodium	10	9	90.0%	100.0%	100.0%
Strontium	10	9	90.0%	100.0%	100.0%
Thallium	10	9	90.0%	10.0%	10.0%
Tin	10	10	100.0%	0.0%	0.0%
Vanadium	10	8	80.0%	50.0%	50.0%
Zinc	10	5	50.0%	70.0%	70.0%

Table O-16B
Summary of Precision Calculations for Dissolved Metals in Groundwater

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 30%	PERCENTAGE WITH RPD <30%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
Aluminum	11	10	90.9%	18.2%	9.1%
Antimony	11	11	100.0%	0.0%	0.0%
Arsenic	11	10	90.9%	72.7%	72.7%
Barium	11	11	100.0%	100.0%	100.0%
Beryllium	11	11	100.0%	0.0%	0.0%
Cadmium	11	11	100.0%	0.0%	0.0%
Calcium	11	11	100.0%	100.0%	100.0%
Cesium	11	11	100.0%	9.1%	18.2%
Chromium	11	11	100.0%	0.0%	0.0%
Cobalt	11	11	100.0%	0.0%	0.0%
Copper	11	11	100.0%	0.0%	0.0%
Iron	11	7	63.6%	100.0%	100.0%
Lead	11	10	90.9%	0.0%	9.1%
Lithium	11	11	100.0%	27.3%	27.3%
Magnesium	11	11	100.0%	100.0%	100.0%
Manganese	11	11	100.0%	100.0%	100.0%
Mercury	11	11	100.0%	0.0%	0.0%
Molybdenum	11	11	100.0%	0.0%	0.0%
Nickel	11	11	100.0%	9.1%	9.1%
Potassium	11	11	100.0%	63.6%	63.6%
Selenium	11	11	100.0%	18.2%	9.1%
Silicon	11	11	100.0%	100.0%	100.0%
Silver	11	10	90.9%	0.0%	9.1%
Sodium	11	11	100.0%	100.0%	100.0%
Strontium	11	11	100.0%	100.0%	100.0%
Thallium	11	11	100.0%	0.0%	9.1%
Tin	11	11	100.0%	9.1%	9.1%
Vanadium	11	11	100.0%	0.0%	0.0%
Zinc	11	9	81.8%	36.4%	36.4%

Table O-17A
Summary of Precision Calculations for Total Radionuclides in Groundwater

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 30%	PERCENTAGE WITH RPD <30%
Americium-241	13	2	15.4%
Cesium-134	1	1	100.0%
Cesium-137	1	0	0.0%
Gross Alpha	9	4	44.4%
Gross Beta	9	6	66.7%
Plutonium-238	4	0	0.0%
Plutonium-239/240	10	2	20.0%
Radium-226	2	2	100.0%
Strontium-89/90	7	4	57.1%
Total Radiocesium	6	1	16.7%
Tritium	1	0	0.0%
Uranium-233/234	11	6	54.5%
Uranium-235	11	0	0.0%
Uranium-238	11	5	45.5%

Table O-17B
Summary of Precision Calculations for Dissolved Radionuclides in Groundwater

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 30%	PERCENTAGE WITH RPD <30%
Americium-241	5	0	0.0%
Cesium-134	4	0	0.0%
Cesium-137	4	1	25.0%
Gross Alpha	12	6	50.0%
Gross Beta	12	9	75.0%
Plutonium-239/240	5	0	0.0%
Radium-226	1	0	0.0%
Strontium-89/90	12	6	50.0%
Total Radiocesium	7	2	28.6%
Uranium-233/234	13	10	76.9%
Uranium-235	13	3	23.1%
Uranium-238	13	6	46.2%

Table O-18
Summary of Precision Calculations for Semi-Volatile Organics in Groundwater

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 30%	PERCENTAGE WITH RPD <30%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
1,2-DICHLOROBENZENE	9	5	55.6%	44.4%	0.0%
1,3-DICHLOROBENZENE	9	9	100.0%	0.0%	0.0%
1,4-DICHLOROBENZENE	9	9	100.0%	0.0%	0.0%
2,4,5-TRICHLOROPHENOL	9	9	100.0%	0.0%	0.0%
2,4,6-TRICHLOROPHENOL	9	9	100.0%	0.0%	0.0%
2,4-DICHLOROPHENOL	9	9	100.0%	0.0%	0.0%
2,4-DIMETHYLPHENOL	9	9	100.0%	0.0%	0.0%
2,4-DINITROPHENOL	9	9	100.0%	0.0%	0.0%
2,4-DINITROTOLUENE	9	9	100.0%	0.0%	0.0%
2,6-DINITROTOLUENE	9	9	100.0%	0.0%	0.0%
2-CHLORONAPHTHALENE	9	9	100.0%	0.0%	0.0%
2-CHLOROPHENOL	9	9	100.0%	0.0%	0.0%
2-METHYLNAPHTHALENE	9	9	100.0%	0.0%	0.0%
2-METHYLPHENOL	9	9	100.0%	0.0%	0.0%
2-NITROANILINE	9	9	100.0%	0.0%	0.0%
2-NITROPHENOL	9	9	100.0%	0.0%	0.0%
3,3'-DICHLOROBENZIDINE	8	8	100.0%	0.0%	0.0%
3-NITROANILINE	7	7	100.0%	0.0%	0.0%
4,6-DINITRO-2-METHYLPHENOL	9	9	100.0%	0.0%	0.0%
4-CHLORO-3-METHYLPHENOL	9	9	100.0%	0.0%	0.0%
4-CHLOROANILINE	8	8	100.0%	0.0%	0.0%
4-CHLOROPHENYL PHENYL ETHER	9	9	100.0%	0.0%	0.0%
4-METHYLPHENOL	9	9	100.0%	0.0%	0.0%
4-NITROANILINE	9	9	100.0%	0.0%	0.0%
4-NITROPHENOL	9	9	100.0%	0.0%	0.0%
ACENAPHTHENE	9	9	100.0%	0.0%	0.0%
ACENAPHTHYLENE	9	9	100.0%	0.0%	0.0%
ANTHRACENE	9	9	100.0%	0.0%	0.0%
BENZO(a)ANTHRACENE	9	8	88.9%	11.1%	0.0%
BENZO(a)PYRENE	9	9	100.0%	0.0%	0.0%
BENZO(b)FLUORANTHENE	9	9	100.0%	0.0%	0.0%
BENZO(ghi)PERYLENE	9	9	100.0%	0.0%	0.0%

Table O-18 (Continued)

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 30%	PERCENTAGE WITH RPD <30%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
BENZOIC ACID	4	4	100.0%	0.0%	0.0%
BENZYL ALCOHOL	4	4	100.0%	0.0%	0.0%
BIS(2-CHLOROETHOXY)METHANE	9	9	100.0%	0.0%	0.0%
BIS(2-CHLOROETHYL)ETHER	9	9	100.0%	0.0%	0.0%
BIS(2-CHLOROISOPROPYL)ETHER	9	9	100.0%	0.0%	0.0%
BIS(2-ETHYLHEXYL)PHTHALATE	8	6	75.0%	37.5%	37.5%
BUTYL BENZYL PHTHALATE	9	9	100.0%	0.0%	0.0%
CARBAZOLE	5	5	100.0%	0.0%	0.0%
DI-n-BUTYL PHTHALATE	9	9	100.0%	0.0%	0.0%
DI-n-OCTYL PHTHALATE	9	9	100.0%	0.0%	0.0%
DIBENZO(a,h)ANTHRACENE	9	9	100.0%	0.0%	0.0%
DIBENZOFURAN	9	9	100.0%	0.0%	0.0%
DIETHYL PHTHALATE	9	9	100.0%	0.0%	0.0%
DIMETHYL PHTHALATE	9	9	100.0%	0.0%	0.0%
FLUORANTHENE	9	9	100.0%	0.0%	0.0%
FLUORENE	9	9	100.0%	0.0%	0.0%
HEXACHLOROBENZENE	9	9	100.0%	0.0%	0.0%
HEXACHLOROBUTADIENE	9	9	100.0%	0.0%	0.0%
HEXACHLOROCYCLOPENTADIENE	9	9	100.0%	0.0%	0.0%
HEXACHLOROETHANE	9	9	100.0%	0.0%	0.0%
INDENO(1,2,3-cd)PYRENE	9	9	100.0%	0.0%	0.0%
ISOPHORONE	9	9	100.0%	0.0%	0.0%
N-NITROSO-DI-n-PROPYLAMINE	9	9	100.0%	0.0%	0.0%
N-NITROSODIPHENYLAMINE	9	9	100.0%	0.0%	0.0%
NAPHTHALENE	9	9	100.0%	0.0%	0.0%
NITROBENZENE	9	9	100.0%	0.0%	0.0%
Octadecanoic Acid	1	1	100.0%	100.0%	100.0%
PENTACHLOROPHENOL	9	9	100.0%	0.0%	0.0%
PHENANTHRENE	9	9	100.0%	0.0%	0.0%
PHENOL	9	9	100.0%	0.0%	0.0%
PYRENE	9	8	88.9%	11.1%	0.0%
p BROMODIPHENYL ETHER	9	9	100.0%	0.0%	0.0%

Table O-19
Summary of Precision Calculations for Volatile Organics in Groundwater

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 30%	PERCENTAGE WITH RPD <30%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
1,1,1-TRICHLOROETHANE	13	13	100.0%	15.4%	15.4%
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
1,1,2-TRICHLOROETHANE	13	13	100.0%	0.0%	0.0%
1,1-DICHLOROETHANE	13	13	100.0%	0.0%	0.0%
1,1-DICHLOROETHENE	13	13	100.0%	15.4%	15.4%
1,2-DICHLOROETHANE	13	13	100.0%	0.0%	0.0%
1,2-DICHLOROETHENE	13	11	84.6%	15.4%	23.1%
1,2-DICHLOROPROPANE	13	13	100.0%	0.0%	0.0%
2-BUTANONE	11	11	100.0%	0.0%	0.0%
2-HEXANONE	13	13	100.0%	0.0%	0.0%
4-METHYL-2-PENTANONE	13	13	100.0%	0.0%	0.0%
ACETONE	11	10	90.9%	9.1%	0.0%
BENZENE	13	13	100.0%	0.0%	0.0%
BROMODICHLOROMETHANE	13	13	100.0%	0.0%	0.0%
BROMOFORM	13	13	100.0%	0.0%	0.0%
BROMOMETHANE	13	13	100.0%	0.0%	0.0%
CARBON DISULFIDE	13	13	100.0%	0.0%	0.0%
CARBON TETRACHLORIDE	13	13	100.0%	0.0%	0.0%
CHLOROBENZENE	13	13	100.0%	0.0%	0.0%
CHLOROETHANE	13	13	100.0%	0.0%	0.0%
CHLOROFORM	12	12	100.0%	0.0%	0.0%
CHLOROMETHANE	13	13	100.0%	0.0%	0.0%
cis-1,3-DICHLOROPROPENE	13	13	100.0%	0.0%	0.0%
DIBROMOCHLOROMETHANE	13	13	100.0%	0.0%	0.0%
ETHYLBENZENE	13	12	92.3%	0.0%	7.7%
METHYLENE CHLORIDE	13	13	100.0%	0.0%	0.0%
STYRENE	13	12	92.3%	23.1%	23.1%
TETRACHLOROETHENE	13	13	100.0%	0.0%	0.0%
TOLUENE	13	13	100.0%	0.0%	0.0%
TOTAL XYLENES	13	13	100.0%	23.1%	23.1%
trans-1,3-DICHLOROPROPENE	13	5	38.5%	0.0%	0.0%
TRICHLOROETHENE	13	13	100.0%	0.0%	0.0%
VINYL ACETATE	5	13	260.0%	0.0%	0.0%
VINYL CHLORIDE	13	13	100.0%	0.0%	0.0%

Table O-20
Summary of Precision Calculations for Pesticides and PCBs in Groundwater

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 30%	PERCENTAGE WITH RPD <30%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
4,4'-DDD	7	7	100.0%	0.0%	0.0%
4,4'-DDE	7	7	100.0%	0.0%	0.0%
4,4'-DDT	8	8	100.0%	0.0%	0.0%
ALDRIN	8	8	100.0%	0.0%	0.0%
alpha-BHC	8	8	100.0%	0.0%	0.0%
alpha-CHLORDANE	8	8	100.0%	0.0%	0.0%
AROCLOR-1016	8	8	100.0%	0.0%	0.0%
AROCLOR-1221	8	8	100.0%	0.0%	0.0%
AROCLOR-1232	8	8	100.0%	0.0%	0.0%
AROCLOR-1242	8	8	100.0%	0.0%	0.0%
AROCLOR-1248	8	8	100.0%	0.0%	0.0%
AROCLOR-1254	8	8	100.0%	0.0%	0.0%
AROCLOR-1260	8	8	100.0%	0.0%	0.0%
beta-BHC	8	8	100.0%	0.0%	0.0%
delta-BHC	8	8	100.0%	0.0%	0.0%
DIELDRIN	8	8	100.0%	0.0%	0.0%
ENDOSULFAN I	8	8	100.0%	0.0%	0.0%
ENDOSULFAN II	8	8	100.0%	0.0%	0.0%
ENDOSULFAN SULFATE	8	8	100.0%	0.0%	0.0%
ENDRIN	8	8	100.0%	0.0%	0.0%
ENDRIN ALDEHYDE	4	4	100.0%	0.0%	0.0%
ENDRIN KETONE	8	8	100.0%	0.0%	0.0%
gamma-BHC (LINDANE)	8	8	100.0%	0.0%	0.0%
gamma-CHLORDANE	8	8	100.0%	0.0%	0.0%
HEPTACHLOR	8	8	100.0%	0.0%	0.0%
HEPTACHLOR EPOXIDE	8	8	100.0%	0.0%	0.0%
METHOXYCHLOR	8	8	100.0%	0.0%	0.0%
TOXAPHENE	8	8	100.0%	0.0%	0.0%

Table O-21A
Summary of Precision Calculations for Total Metals in Surface Water

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 30%	PERCENTAGE WITH RPD <30%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
Aluminum	4	1	25.0%	100.0%	100.0%
Antimony	4	4	100.0%	0.0%	0.0%
Arsenic	4	4	100.0%	0.0%	0.0%
Barium	4	4	100.0%	100.0%	100.0%
Beryllium	4	4	100.0%	0.0%	0.0%
Cadmium	4	4	100.0%	0.0%	0.0%
Calcium	4	4	100.0%	100.0%	100.0%
Cesium	3	3	100.0%	0.0%	0.0%
Chromium	4	4	100.0%	0.0%	0.0%
Cobalt	4	4	100.0%	0.0%	0.0%
Copper	4	1	25.0%	75.0%	50.0%
Iron	4	2	50.0%	75.0%	100.0%
Lead	4	2	50.0%	50.0%	75.0%
Lithium	4	4	100.0%	100.0%	100.0%
Magnesium	4	4	100.0%	100.0%	100.0%
Manganese	4	4	100.0%	100.0%	100.0%
Mercury	4	4	100.0%	25.0%	25.0%
Molybdenum	4	4	100.0%	0.0%	0.0%
Nickel	4	4	100.0%	0.0%	0.0%
Potassium	4	4	100.0%	100.0%	100.0%
Selenium	4	4	100.0%	0.0%	0.0%
Silicon	4	4	100.0%	100.0%	100.0%
Silver	4	4	100.0%	0.0%	0.0%
Sodium	4	4	100.0%	100.0%	100.0%
Strontium	4	4	100.0%	100.0%	100.0%
Thallium	4	4	100.0%	50.0%	0.0%
Tin	4	4	100.0%	0.0%	0.0%
Vanadium	4	4	100.0%	25.0%	25.0%
Zinc	3	1	33.3%	66.7%	66.7%

Table O-21B
Summary of Precision Calculations for Dissolved Metals in Surface Water

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 30%	PERCENTAGE WITH RPD <30%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
Aluminum	4	3	75.0%	25.0%	0.0%
Antimony	4	4	100.0%	0.0%	0.0%
Arsenic	4	4	100.0%	0.0%	0.0%
Barium	4	4	100.0%	100.0%	100.0%
Beryllium	4	4	100.0%	0.0%	0.0%
Cadmium	4	4	100.0%	0.0%	0.0%
Calcium	4	4	100.0%	100.0%	100.0%
Cesium	2	2	100.0%	0.0%	0.0%
Chromium	4	4	100.0%	0.0%	0.0%
Cobalt	4	4	100.0%	0.0%	0.0%
Copper	4	4	100.0%	0.0%	0.0%
Iron	4	4	100.0%	25.0%	50.0%
Lead	4	3	75.0%	0.0%	25.0%
Lithium	4	3	75.0%	100.0%	100.0%
Magnesium	4	4	100.0%	100.0%	100.0%
Manganese	4	4	100.0%	100.0%	100.0%
Mercury	4	4	100.0%	0.0%	0.0%
Molybdenum	4	4	100.0%	0.0%	0.0%
Nickel	4	4	100.0%	0.0%	0.0%
Potassium	4	4	100.0%	100.0%	100.0%
Selenium	4	3	75.0%	25.0%	50.0%
Silicon	4	4	100.0%	100.0%	100.0%
Silver	4	4	100.0%	0.0%	0.0%
Sodium	4	4	100.0%	100.0%	100.0%
Strontium	4	4	100.0%	100.0%	100.0%
Thallium	4	4	100.0%	25.0%	25.0%
Tin	4	4	100.0%	0.0%	0.0%
Vanadium	4	3	75.0%	0.0%	25.0%
Zinc	3	3	100.0%	66.7%	66.7%

Table O-22A
Summary of Precision Calculations for Total Radionuclides in Surface Water

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 30%	PERCENTAGE WITH RPD <30%
Americium-241	3	0	0.0%
Gross Alpha	3	1	33.3%
Gross Beta	3	1	33.3%
Plutonium-239/240	2	0	0.0%
Strontium-89/90	3	2	66.7%
Total Radiocesium	1	0	0.0%
Uranium-233/234	4	2	50.0%
Uranium-235	4	0	0.0%
Uranium-238	4	1	25.0%

Table O-22B
Summary of Precision Calculations for Dissolved Radionuclides in Surface Water

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 30%	PERCENTAGE WITH RPD <30%
Americium-241	3	1	33.3%
Cesium-137	1	0	0.0%
Gross Alpha	4	1	25.0%
Gross Beta	4	1	25.0%
Plutonium-239/240	4	0	0.0%
Strontium-89/90	4	1	25.0%
Total Radiocesium	1	1	100.0%
Uranium-233/234	3	3	100.0%
Uranium-235	3	1	33.3%
Uranium-238	3	3	100.0%

Table O-23
Summary of Precision Calculations for Volatile Organics in Surface Water

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 30%	PERCENTAGE WITH RPD <30%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
1,1,2,2-TETRACHLOROETHANE	4	4	100.0%	0.0%	0.0%
1,1,2-TRICHLOROETHANE	4	4	100.0%	0.0%	0.0%
1,1-DICHLOROETHANE	4	4	100.0%	0.0%	0.0%
1,1-DICHLOROETHENE	4	4	100.0%	0.0%	0.0%
1,2-DICHLOROETHANE	4	4	100.0%	0.0%	0.0%
1,2-DICHLOROETHENE	4	4	100.0%	0.0%	0.0%
1,2-DICHLOROPROPANE	4	4	100.0%	0.0%	0.0%
2-BUTANONE	1	1	100.0%	0.0%	0.0%
2-HEXANONE	4	4	100.0%	0.0%	0.0%
4-METHYL-2-PENTANONE	4	4	100.0%	0.0%	0.0%
ACETONE	4	4	100.0%	0.0%	0.0%
BENZENE	4	4	100.0%	0.0%	0.0%
BROMODICHLOROMETHANE	4	4	100.0%	0.0%	0.0%
BROMOFORM	4	4	100.0%	0.0%	0.0%
BROMOMETHANE	3	3	100.0%	0.0%	0.0%
CARBON DISULFIDE	4	4	100.0%	0.0%	0.0%
CARBON TETRACHLORIDE	4	4	100.0%	0.0%	0.0%
CHLOROBENZENE	4	4	100.0%	0.0%	0.0%
CHLOROETHANE	3	3	100.0%	0.0%	0.0%
CHLOROFORM	4	4	100.0%	0.0%	0.0%
CHLOROMETHANE	4	4	100.0%	0.0%	0.0%
DIBROMOCHLOROMETHANE	4	4	100.0%	0.0%	0.0%
ETHYLBENZENE	4	4	100.0%	0.0%	0.0%
METHYLENE CHLORIDE	4	4	100.0%	25.0%	25.0%
STYRENE	4	4	100.0%	0.0%	0.0%
TETRACHLOROETHENE	4	4	100.0%	0.0%	0.0%
TOLUENE	4	4	100.0%	0.0%	0.0%
TOTAL XYLENES	4	4	100.0%	0.0%	0.0%
TRICHLOROETHENE	4	4	100.0%	0.0%	0.0%
VINYL ACETATE	4	4	100.0%	0.0%	0.0%
VINYL CHLORIDE	4	4	100.0%	0.0%	0.0%
cis 1,3 DICHLOROPROPENE	4	4	100.0%	0.0%	0.0%
trans 1,3 DICHLOROPROPENE	4	4	100.0%	0.0%	0.0%

Table O-24
Summary of Precision Calculations for Semi-Volatile Organics in Surface Water

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 30%	PERCENTAGE WITH RPD <30%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
#REF!	#REF!	#REF!	#REF!	#REF!	#REF!
1,2-DICHLOROBENZENE	4	4	100.0%	0.0%	0.0%
1,3-DICHLOROBENZENE	4	4	100.0%	0.0%	0.0%
1,4-DICHLOROBENZENE	4	4	100.0%	0.0%	0.0%
2,4,5-TRICHLOROPHENOL	4	4	100.0%	0.0%	0.0%
2,4,6-TRICHLOROPHENOL	4	4	100.0%	0.0%	0.0%
2,4-DICHLOROPHENOL	4	4	100.0%	0.0%	0.0%
2,4-DIMETHYLPHENOL	4	4	100.0%	0.0%	0.0%
2,4-DINITROPHENOL	2	2	100.0%	0.0%	0.0%
2,4-DINITROTOLUENE	4	4	100.0%	0.0%	0.0%
2,6-DINITROTOLUENE	4	4	100.0%	0.0%	0.0%
2-CHLORONAPHTHALENE	4	4	100.0%	0.0%	0.0%
2 CHLOROPHENOL	4	4	100.0%	0.0%	0.0%
2 METHYLNAPHTHALENE	4	4	100.0%	0.0%	0.0%
2 METHYLPHENOL	4	4	100.0%	0.0%	0.0%
2 NITROANILINE	4	4	100.0%	0.0%	0.0%
2 NITROPHENOL	4	4	100.0%	0.0%	0.0%
3,3'-DICHLOROBENZIDINE	4	4	100.0%	0.0%	0.0%
3-NITROANILINE	4	4	100.0%	0.0%	0.0%
4,6-DINITRO-2-METHYLPHENOL	4	4	100.0%	0.0%	0.0%
4-CHLORO-3-METHYLPHENOL	4	4	100.0%	0.0%	0.0%
4-CHLOROANILINE	4	4	100.0%	0.0%	0.0%
4-CHLOROPHENYL PHENYL ETHER	4	4	100.0%	0.0%	0.0%
4-METHYLPHENOL	4	4	100.0%	0.0%	0.0%
4-NITROPHENOL	4	4	100.0%	0.0%	0.0%
ACENAPHTHENE	4	4	100.0%	0.0%	0.0%
ACENAPHTHYLENE	4	4	100.0%	0.0%	0.0%
ANTHRACENE	4	4	100.0%	0.0%	0.0%
BENZO(a)ANTHRACENE	4	4	100.0%	0.0%	0.0%
BENZO(a)PYRENE	4	4	100.0%	0.0%	0.0%
BENZO(b)FLUORANTHENE	4	4	100.0%	0.0%	0.0%
BENZO(ghi)PERYLENE	4	4	100.0%	0.0%	0.0%
BENZO(k)FLUORANTHENE	4	4	100.0%	0.0%	0.0%

Table O-24 (Continued)

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 30%	PERCENTAGE WITH RPD <30%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
BENZYL ALCOHOL	4	4	100.0%	0.0%	0.0%
BIS(2-CHLOROETHOXY)METHANE	4	4	100.0%	0.0%	0.0%
BIS(2-CHLOROETHYL)ETHER	4	4	100.0%	0.0%	0.0%
BIS(2-CHLOROISOPROPYL)ETHER	4	4	100.0%	0.0%	0.0%
BIS(2-ETHYLHEXYL)PHTHALATE	4	3	75.0%	0.0%	25.0%
BUTYL BENZYL PHTHALATE	4	4	100.0%	0.0%	0.0%
CHRYSENE	4	4	100.0%	0.0%	0.0%
DI-n-BUTYL PHTHALATE	4	4	100.0%	0.0%	0.0%
DI-n-OCTYL PHTHALATE	4	4	100.0%	0.0%	0.0%
DIBENZO(a,h)ANTHRACENE	4	4	100.0%	0.0%	0.0%
DIBENZOFURAN	4	4	100.0%	0.0%	0.0%
DIETHYL PHTHALATE	4	4	100.0%	0.0%	0.0%
DIMETHYL PHTHALATE	4	4	100.0%	0.0%	0.0%
FLUORANTHENE	4	4	100.0%	0.0%	0.0%
FLUORENE	4	4	100.0%	0.0%	0.0%
HEXACHLOROBENZENE	4	4	100.0%	0.0%	0.0%
HEXACHLOROBUTADIENE	4	4	100.0%	0.0%	0.0%
HEXACHLOROCYCLOPENTADIENE	4	4	100.0%	0.0%	0.0%
HEXACHLOROETHANE	4	4	100.0%	0.0%	0.0%
INDENO(1,2,3-cd)PYRENE	4	4	100.0%	0.0%	0.0%
ISOPHORONE	4	4	100.0%	0.0%	0.0%
N-NITROSO-DI-n-PROPYLAMINE	4	4	100.0%	0.0%	0.0%
N-NITROSODIPHENYLAMINE	4	4	100.0%	0.0%	0.0%
NAPHTHALENE	4	4	100.0%	0.0%	0.0%
NITROBENZENE	4	4	100.0%	0.0%	0.0%
PENTACHLOROPHENOL	4	4	100.0%	0.0%	0.0%
PHENANTHRENE	4	4	100.0%	0.0%	0.0%
PHENOL	4	4	100.0%	0.0%	0.0%
PYRENE	4	4	100.0%	0.0%	0.0%
p-BROMODIPHENYL ETHER	4	4	100.0%	0.0%	0.0%

Table O-25
Summary of Precision Calculations for Pesticides and PCBs in Surface Water

ANALYTE	NUMBER OF REAL/DUP PAIRS	NUMBER WITH RPD < 30%	PERCENTAGE WITH RPD <30%	PERCENT DETECTS FOR REAL SAMPLES	PERCENT DETECTS FOR DUP SAMPLES
4,4'-DDD	4	4	100.0%	0.0%	0.0%
4,4'-DDE	4	4	100.0%	0.0%	0.0%
4,4'-DDT	4	4	100.0%	0.0%	0.0%
ALDRIN	4	4	100.0%	0.0%	0.0%
AROCLOR-1016	4	4	100.0%	0.0%	0.0%
AROCLOR-1221	4	4	100.0%	0.0%	0.0%
AROCLOR-1232	4	4	100.0%	0.0%	0.0%
AROCLOR-1242	4	4	100.0%	0.0%	0.0%
AROCLOR-1248	4	4	100.0%	0.0%	0.0%
AROCLOR-1254	4	4	100.0%	0.0%	0.0%
AROCLOR-1260	4	4	100.0%	0.0%	0.0%
DIELDRIN	4	4	100.0%	0.0%	0.0%
ENDOSULFAN I	4	4	100.0%	0.0%	0.0%
ENDOSULFAN II	4	4	100.0%	0.0%	0.0%
ENDOSULFAN SULFATE	4	4	100.0%	0.0%	0.0%
ENDRIN	4	4	100.0%	0.0%	0.0%
ENDRIN KETONE	4	4	100.0%	0.0%	0.0%
HEPTACHLOR	4	4	100.0%	0.0%	0.0%
HEPTACHLOR EPOXIDE	4	4	100.0%	0.0%	0.0%
METHOXYCHLOR	4	4	100.0%	0.0%	0.0%
TOXAPHENE	4	4	100.0%	0.0%	0.0%
alpha-BHC	4	4	100.0%	0.0%	0.0%
alpha-CHLORDANE	4	4	100.0%	0.0%	0.0%
beta-BHC	4	4	100.0%	0.0%	0.0%
delta-BHC	4	4	100.0%	0.0%	0.0%
gamma-BHC (LINDANE)	4	4	100.0%	0.0%	0.0%
gamma-CHLORDANE	4	4	100.0%	0.0%	0.0%

Table O-26: TM15 Sampling Summary

Location	TM15 Program	Sample Number	QC Code	QC Partner	Sample Type	Completion Type	IHSS	Analyses Requested						
								Rads	Metals	VOA	SVOA	Pest/PCB	Water Qual	Geotech
58793	GW	GW50123AS	REAL		GW	WELL	133	X	X	X	X	X	X	
58793	GW	GW50124AS	RNS	GW50123AS	GW	WELL	133	X		X			X	
59393	GW	GW50127AS	REAL		GW	WELL	115/196		X	X	X	X	X	
59393	GW	GW50134AS	TB	GW50127AS	GW	WELL	115/196			X				
59493	GW	GW50113AS	REAL		GW	WELL	115/196	X	X	X	X	X	X	
59493	GW	GW50113AS	REAL		GW	WELL	115/196	X	X	X	X	X	X	
59493	GW	GW50114AS	DUP	GW50113AS	GW	WELL	115/196	X	X	X	X	X	X	
59493	GW	GW50114AS	DUP	GW50113AS	GW	WELL	115/196	X	X	X	X	X	X	
59593	GW	GW50131AS	REAL		GW	WELL	115/196	X	X	X	X	X	X	
59793	GW	GW50133AS	REAL		GW	WP	115/196			X			X	
59793	GW	GW50136AS	RNS	GW50133AS	GW	WP	115/196	X	X	X	X	X	X	
59893	GW	GW50222AS	REAL		GW	WP	115/196						X	
59993	GW	GW50148AS	REAL		GW	WP	115/196			X			X	
59993	GW	GW50224AS	REAL		GW	WP	115/196		X				X	
60093	GW	GW50218AS	REAL		GW	WP	115/196	X	X	X	X		X	
60093	GW	GW50219AS	TB	GW50218AS	GW	WP	115/196			X				
60293	GW	GW50143AS	REAL		GW	WP	115/196	X	X	X	X	X	X	
60293	GW	GW50144AS	DUP	GW50143AS	GW	WP	115/196	X	X	X	X	X	X	
60293	GW	GW50170AS	REAL		GW	WP	115/196	X	X	X	X		X	
60293	GW	GW50171AS	DUP	GW50170AS	GW	WP	115/196	X	X	X	X		X	
60293	GW	GW50181AS	TB	GW50170-171AS	GW	WP	115/196			X				
60393	GW	GW50220AS	REAL		GW	WP	115/196		X	X			X	
60393	GW	GW50221AS	TB	GW50220AS	GW	WP	115/196			X				
60493	GW	GW50156AS	REAL		GW	WP	115/196						X	
60493	GW	GW50226AS	REAL		GW	WP	115/196						X	
60593	GW	GW50155AS	REAL		GW	WP	115/196						X	
60593	GW	GW50212AS	REAL		GW	WP	115/196	X	X	X	X		X	
60593	GW	GW50213AS	TB	GW50212AS	GW	WP	115/196			X				
60693	GW	GW50160AS	REAL		GW	WP	115/196						X	
60693	GW	GW50214AS	REAL		GW	WP	115/196	X	X	X	X		X	
60693	GW	GW50215AS	TB	GW50214AS	GW	WP	115/196			X				
60893	GW	GW50157AS	REAL		GW	WP	115/196						X	
60893	GW	GW50158AS	RNS	GW50157AS	GW	WP	115/196		X		X		X	
60893	GW	GW50175AS	REAL		GW	WP	115/196	X	X	X	X		X	
60993	GW	GW50210AS	REAL		GW	MINI	115/196		X	X			X	
60993	GW	GW50211AS	TB	GW50210AS	GW	MINI	115/196			X				
61093	GW	GW50150AS	RNS	GW50151AS	GW	MINI	115/196	X	X	X	X	X	X	
61093	GW	GW50151AS	REAL		GW	MINI	115/196	X	X	X	X	X	X	
61093	GW	GW50154AS	DUP	GW50151AS	GW	MINI	115/196	X	X	X	X	X	X	
61093	GW	GW50164AS	TB	GW50151AS	GW	MINI	115/196			X				
61093	GW	GW50176AS	REAL		GW	MINI	115/196	X	X	X	X		X	
61093	GW	GW50177AS	DUP	GW50176AS	GW	MINI	115/196	X	X	X	X		X	
61093	GW	GW50194AS	TB	GW50176AS	GW	MINI	115/196			X				
61293	GW	GW50125AS	RNS	GW50126AS	GW	WELL	115/196	X	X	X	X	X	X	
61293	GW	GW50126AS	REAL		GW	WELL	115/196		X	X			X	
62593	GW	GW50216AS	REAL		GW	WP	133	X	X		X		X	
62693	GW	GW50217AS	REAL		GW	WP	133	X	X		X		X	
62793	GW	GW50147AS	REAL		GW	WP	115/196			X			X	
62793	GW	GW50149AS	DUP	GW50147AS	GW	WP	115/196			X			X	
62793	GW	GW50152AS	TB	GW50147AS	GW	WP	115/196			X				
62793	GW	GW50228AS	REAL		GW	WP	115/196		X	X			X	
62793	GW	GW50229AS	TB	GW50228AS	GW	WP	115/196			X				
62893	GW	GW50122AS	REAL		GW	WP	115/196	X	X	X	X	X	X	
62893	GW	GW50140AS	REAL		GW	WP	115/196						X	
62893	GW	GW50163AS	TB	GW50165AS	GW	WP	115/196			X				
62893	GW	GW50165AS	REAL		GW	WP	115/196						X	
62893	GW	GW50180AS	REAL		GW	WP	115/196	X	X	X	X		X	
62893	GW	GW50200AS	TB	GW50180AS	GW	WP	115/196			X				
63093	GW	GW50129AS	RNS	GW50135AS	GW	WELL	133						X	

Table O-26 (Continued)

Location	TM15 Program	Sample Number	QC Code	QC Partner	Sample Type	Completion Type	IHSS	Analyses Requested						
								Rads	Metals	VOA	SVOA	Pest/PCB	Wat	[illegible]
63093	GW	GW50135AS	REAL		GW	WELL	133	X	X	X	X	X	X	
63093	GW	GW50168AS	TB	GW50135AS	GW	WELL	133			X				
63193	GW	GW50128AS	REAL		GW	MINI	115/196	X	X	X	X	X	X	
63193	GW	GW50130AS	DUP	GW50128AS	GW	MINI	115/196	X	X	X	X	X	X	
63193	GW	GW50132AS	RNS	GW50128AS	GW	MINI	115/196	X	X	X	X	X	X	
63193	GW	GW50182AS	REAL		GW	MINI	115/196	X	X	X	X		X	
63193	GW	GW50183AS	DUP	GW50182AS	GW	MINI	115/196	X	X	X	X		X	
63193	GW	GW50184AS	RNS	GW50182-183AS	GW	MINI	115/196	X	X	X	X		X	
63193	GW	GW50200AS	TB	GW50182-183AS	GW	MINI	115/196			X				
63693	GW	GW50137AS	REAL		GW	WP	133			X			X	
63693	GW	GW50139AS	DUP	GW50137AS	GW	WP	133			X			X	
63693	GW	GW50166AS	REAL		GW	WP	133						X	
63693	GW	GW50167AS	TB	GW50166AS	GW	WP	133			X				
63693	GW	GW50207AS	REAL		GW	WP	133						X	
63793	GW	GW50115AS	REAL		GW	MINI	133	X	X	X	X	X	X	
63793	GW	GW50115AS	REAL		GW	WP	133	X	X	X	X	X	X	
63793	GW	GW50116AS	RNS	GW50115AS	GW	WP	133	X	X	X	X	X	X	
63793	GW	GW50117AS	TB	GW50115AS	GW	WP	133			X				
63793	GW	GW50206AS	REAL		GW	WP	133	X	X		X		X	
63893	GW	GW50120AS	REAL		GW	WP	115	X	X	X	X	X	X	
63893	GW	GW50121AS	REAL		GW	WP	115		X	X	X	X	X	
63893	GW	GW50187AS	REAL		GW	WP	115	X	X	X	X		X	
63893	GW	GW50196AS	TB	GW50187AS	GW	WP	115			X				
63993	GW	GW50119AS	REAL		GW	WP	115	X	X	X	X	X	X	
63993	GW	GW50188AS	REAL		GW	WP	115	X	X	X	X		X	
63993	GW	GW50197AS	TB	GW50188AS	GW	WP	115			X				
64093	GW	GW50118AS	REAL		GW	WP	115	X	X	X	X	X	X	
64093	GW	GW50189AS	REAL		GW	WP	115	X	X	X	X			
64093	GW	GW50198AS	TB	GW50189AS	GW	WP	115			X				
55194	TDEM	BH00028AS	REAL		BH	MINI	133	X	X					
55194	TDEM	BH00029AS	REAL		BH	MINI	133	X	X					
55194	TDEM	BH00030AS	REAL		BH	MINI	133	X	X					
55194	TDEM	BH00101AS	RNS		BH	MINI	133	X	X					
55294	TDEM	BH00031AS	REAL		BH	BH	133	X	X					
55294	TDEM	BH00032AS	REAL		BH	BH	133	X	X					
55294	TDEM	BH00033AS	REAL		BH	BH	133	X	X					
55394	GW	BH00055AS	REAL		GEOTECH	MINI	133							X
55394	GW	GW50106AS	REAL		GW	MINI	133	X	X	X	X	X	X	
55394	GW	GW50107AS	RNS		GW	MINI	133	X	X	X	X	X	X	
55394	GW	GW50111AS	TB		GW	MINI	133			X				
55494	TDEM	BH00023AS	REAL		GEOTECH	MINI	133							X
55494	TDEM	BH00024AS	REAL		GEOTECH	MINI	133							X
55594	TDEM	BH00025AS	REAL		GEOTECH	MINI	133							X
55594	TDEM	BH00100AS	RNS		BH	MINI	133	X	X					
55694	TDEM	BH00041AS	REAL		BH	BH	133	X	X					
55694	TDEM	BH00042AS	REAL		BH	BH	133	X	X					
55794	GW	BH00057AS	REAL		GEOTECH	MINI	133							X
55894	TDEM	BH00036AS	REAL		BH	BH	133	X	X					
55894	TDEM	BH00103AS	RNS		BH	BH	133	X	X					
55994	TDEM	BH00034AS	REAL		BH	BH	133	X	X					
55994	TDEM	BH00035AS	REAL		BH	BH	133	X	X					
55994	TDEM	BH00102AS	RNS		BH	BH	133	X	X					
56094	TDEM	BH00037AS	REAL		BH	BH	133	X	X					
56094	TDEM	BH00038AS	REAL		BH	BH	133	X	X					
56094	TDEM	BH00039AS	REAL		BH	BH	133	X	X					
56094	TDEM	BH00040AS	REAL		BH	BH	133	X	X					
56094	TDEM	BH00104AS	RNS		BH	BH	133	X	X					
56194	TDEM	BH00043AS	REAL		BH	BH	133	X	X					
56194	TDEM	BH00072AS	REAL		BH	BH	133	X	X					

Table O-26 (Continued)

Location	TM15 Program	Sample Number	QC Code	QC Partner	Sample Type	Completion Type	IHSS	Analyses Requested						
								Rads	Metals	VOA	SVOA	Pest/PCB	Water Qual	Geotech
56194	TDEM	BH00073AS	REAL		BH	BH	133	X	X					
56194	TDEM	BH00074AS	REAL		BH	BH	133	X	X					
56194	TDEM	BH00075AS	REAL	BH00076AS	BH	BH	133	X	X					
56194	TDEM	BH00076AS	DUP	BH00075AS	BH	BH	133	X	X					
56194	TDEM	BH00077AS	REAL		BH	BH	133	X	X					
56194	TDEM	BH00105AS	RNS		BH	BH	133							
56194	TDEM	BH00107AS	RNS		BH	BH	133	X	X					
56294	GW	BH00026AS	REAL		GEOTECH	MINI	133							X
56294	GW	BH00027AS	REAL		GEOTECH	MINI	133							X
56394	GW	BH00056AS	REAL		GEOTECH	BH	133							X
56494	GW	BH00021AS	REAL		GEOTECH	MINI	133							X
56494	GW	BH00022AS	REAL		GEOTECH	MINI	133							X
56594	GW	BH00058AS	REAL		GEOTECH	MINI	133							X
56594	GW	GW50105AS	REAL		GW	MINI	133	X	X	X	X	X	X	
56594	GW	GW50110AS	TB		GW	MINI	133			X				
56694	GW	BH00092AS	REAL		BH	BH	115/196			X				
56694	GW	BH00093AS	REAL		BH	BH	115/196			X				
56694	GW	BH00094AS	REAL		BH	BH	115/196			X				
56694	GW	BH00095AS	REAL	BH00096AS	BH	BH	115/196	X	X		X	X		
56694	GW	BH00096AS	DUP	BH00095AS	BH	BH	115/196	X	X		X	X		
56694	GW	BH00097AS	REAL		BH	BH	115/196			X				
56694	GW	BH00098AS	REAL		BH	BH	115/196	X	X		X	X		
56694	GW	BH00099AS	REAL		BH	BH	115/196			X				
56694	GW	BH00109AS	RNS		BH	BH	115/196	X	X	X	X	X		
56694	GW	BH00110AS	RNS		BH	BH	115/196	X	X	X	X	X		
56694	GW	BH00111AS	REAL		DRUM	BH	115/196	X	X	X	X	X		
56694	GW	BH00112AS	REAL		DRUM	BH	115/196	X	X	X	X	X		
56694	GW	BH00113AS	REAL		DRUM	BH	115/196	X	X	X	X	X		
56694	GW	BH00115AS	RNS		DRUM	BH	115/196	X	X	X	X	X		
56694	GW	BH00116AS	FB		BH	BH	115/196			X				
56694	GW	BH00122AS	REAL		DRUM	BH	115/196	X	X	X	X	X		
56694	GW	BH00134AS	REAL		GEOTECH	BH	115/196							X
56794	GEOTECH	BH00228AS	REAL		GEOTECH	BH	115/196							X
56794	GEOTECH	BH00229AS	REAL		GEOTECH	BH	115/196							X
56794	GEOTECH	BH00230AS	REAL		GEOTECH	BH	115/196							X
56794	GEOTECH	BH00231AS	REAL		GEOTECH	BH	115/196							X
56794	GEOTECH	BH00232AS	REAL		GEOTECH	BH	115/196							X
56794	GEOTECH	BH00233AS	REAL		GEOTECH	BH	115/196							X
56794	GEOTECH	BP00034AS	REAL	BP00035AS	DRUM	BH	115/196	X	X	X	X	X		
56794	GEOTECH	BP00035AS	DUP	BP00034AS	DRUM	BH	115/196	X	X	X	X	X		
56794	GEOTECH	BP00036AS	RNS		DRUM	BH	115/196	X	X	X	X	X		
56894	GEOTECH	BH00216AS	REAL		GEOTECH	BH	115/196							X
56894	GEOTECH	BH00217AS	REAL		GEOTECH	BH	115/196							X
56894	GEOTECH	BH00218AS	REAL		GEOTECH	BH	115/196							X
56894	GEOTECH	BH00219AS	REAL		GEOTECH	BH	115/196							X
56894	GEOTECH	BH00220AS	REAL		GEOTECH	BH	115/196							X
56894	GEOTECH	BH00221AS	REAL		GEOTECH	BH	115/196							X
56894	GEOTECH	BH00222AS	REAL		GEOTECH	BH	115/196							X
56894	GEOTECH	BH00244AS	TB		BH	BH	115/196			X				
56894	GEOTECH	BP00032AS	REAL		DRUM	BH	115/196	X	X	X	X	X		
56894	GEOTECH	BP00033AS	RNS		DRUM	BH	115/196	X	X	X	X	X		
56994	GEOTECH	BH00185AS	REAL		GEOTECH	WELL	115/196							X
56994	GEOTECH	BH00186AS	REAL		GEOTECH	WELL	115/196							X
56994	GEOTECH	BH00187AS	REAL		GEOTECH	WELL	115/196							X
56994	GEOTECH	BH00188AS	REAL		GEOTECH	WELL	115/196							X
56994	GEOTECH	BH00189AS	REAL		GEOTECH	WELL	115/196							X
56994	GEOTECH	BH00190AS	REAL		GEOTECH	WELL	115/196							X
56994	GEOTECH	BH00191AS	REAL		GEOTECH	WELL	115/196							X
56994	GEOTECH	BP00013AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		

Table O-26 (Continued)

Location	TM15 Program	Sample Number	QC Code	QC Partner	Sample Type	Completion Type	IHSS	Analyses Requested						
								Rads	Metals	VOA	SVOA	Pest/PCB	Water Qual	[illegible]
57094	GEOTECH	BH00138AS	REAL		GEOTECH	WELL	115/196							X
57094	GEOTECH	BH00139AS	REAL		GEOTECH	WELL	115/196							X
57094	GEOTECH	BH00140AS	REAL		GEOTECH	WELL	115/196							X
57094	GEOTECH	BH00141AS	REAL		GEOTECH	WELL	115/196							X
57094	GEOTECH	BH00142AS	REAL		GEOTECH	WELL	115/196							X
57094	GEOTECH	BH00143AS	REAL		GEOTECH	WELL	115/196							X
57094	GEOTECH	BH00144AS	REAL		GEOTECH	WELL	115/196							X
57094	GEOTECH	BH00145AS	REAL		GEOTECH	WELL	115/196							X
57094	GEOTECH	BH00146AS	REAL		GEOTECH	WELL	115/196							X
57094	GEOTECH	BH00147AS	REAL	BH00148AS	DRUM	WELL	115/196	X	X	X	X	X		
57094	GEOTECH	BH00148AS	DUP	BH00147AS	DRUM	WELL	115/196	X	X	X	X	X		
57194	GEOTECH	BH00192AS	REAL		GEOTECH	WELL	115/196							X
57194	GEOTECH	BH00193AS	REAL		GEOTECH	WELL	115/196							X
57194	GEOTECH	BH00194AS	REAL		GEOTECH	WELL	115/196							X
57194	GEOTECH	BH00195AS	REAL		GEOTECH	WELL	115/196							X
57194	GEOTECH	BH00196AS	REAL		GEOTECH	WELL	115/196							X
57194	GEOTECH	BP00014AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
57194	GEOTECH	BP00015AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
57194	GEOTECH	BP00016AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
57194	GEOTECH	BP00017AS	RNS		DRUM	WELL	115/196	X	X	X	X	X		
57194	GEOTECH	BP00018AS	RNS		DRUM	WELL	115/196	X	X	X	X	X		
57194	GEOTECH	BP00029AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
57294	TREAT	BH00090AS	REAL		BH	BH	133							
57294	TREAT	BH00091AS	REAL		DRUM	BH	133	X	X					
57394	GEOTECH	BH00123AS	REAL		GEOTECH	BH	115/196							X
57394	GEOTECH	BH00124AS	REAL		GEOTECH	BH	115/196							X
57394	GEOTECH	BH00125AS	REAL		GEOTECH	BH	115/196							X
57494	GEOTECH	BH00175AS	REAL		GEOTECH	BH	115/196							
57494	GEOTECH	BH00176AS	REAL		GEOTECH	BH	115/196							
57494	GEOTECH	BH00177AS	REAL		GEOTECH	BH	115/196							X
57494	GEOTECH	BP00004AS	REAL		DRUM	BH	115/196	X	X	X	X	X		
57594	GW	BH00078AS	REAL		BH	WELL	115/196	X	X		X	X		
57594	GW	BH00079AS	REAL		BH	WELL	115/196			X				
57594	GW	BH00080AS	REAL		BH	WELL	115/196			X				
57594	GW	BH00081AS	REAL		BH	WELL	115/196			X				
57594	GW	BH00082AS	REAL		BH	WELL	115/196	X	X		X	X		
57594	GW	BH00083AS	REAL		BH	WELL	115/196			X				
57594	GW	BH00084AS	REAL		BH	WELL	115/196			X				
57594	GW	BH00085AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
57594	GW	BH00086AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
57594	GW	BH00087AS	REAL		BH	WELL	115/196	X	X	X	X	X		
57594	GW	BH00108AS	RNS		BH	WELL	115/196	X	X					
57594	GW	BH00117AS	RNS		DRUM	WELL	115/196	X	X	X				
57594	GW	BH00121AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
57694	GEOTECH	BH00197AS	REAL		GEOTECH	BH	115/196							X
57694	GEOTECH	BH00198AS	REAL		GEOTECH	BH	115/196							X
57694	GEOTECH	BH00199AS	REAL		GEOTECH	BH	115/196							X
57694	GEOTECH	BH00200AS	REAL		GEOTECH	BH	115/196							X
57694	GEOTECH	BH00201AS	REAL		GEOTECH	BH	115/196							X
57694	GEOTECH	BP00019AS	REAL		DRUM	BH	115/196	X	X	X	X	X		
57694	GEOTECH	BP00022AS	RNS		DRUM	BH	115/196	X	X	X	X	X		
57794	GEOTECH	BH00128AS	REAL		GEOTECH	BH	115/196							X
57794	GEOTECH	BH00129AS	REAL		GEOTECH	BH	115/196							X
57794	GEOTECH	BH00130AS	REAL		GEOTECH	BH	115/196							X
57794	GEOTECH	BH00131AS	REAL		GEOTECH	BH	115/196							X
57894	GW	GW50141AS	DUP	GW50161AS	GW	MINI	115/196	X	X	X	X	X	X	
57894	GW	GW50142AS	RNS		GW	MINI	115/196	X	X	X	X	X	X	
57894	GW	GW50145AS	TB		GW	MINI	115/196			X				
57894	GW	GW50161AS	REAL	GW50141AS	GW	MINI	115/196	X	X	X	X	X	X	

Table O-26 (Continued)

Location	TM15 Program	Sample Number	QC Code	QC Partner	Sample Type	Completion Type	IHSS	Analyses Requested						
								Rads	Metals	VOA	SVOA	Pest/PCB	Water Qual	Geotech
57894	GW	GW50162AS	TB		GW	MINI	115/196							
57994	GW	BH00044AS	REAL		BH	MINI	115/196			X				
57994	GW	BH00045AS	REAL		BH	MINI	115/196			X				
57994	GW	BH00046AS	REAL		BH	MINI	115/196			X				
57994	GW	BH00047AS	REAL		BH	MINI	115/196	X	X		X	X		
58094	GW	BH00061AS	REAL		GEOTECH	MINI	115/196							X
58094	GW	GW50101AS	RNS		GW	MINI	115/196	X	X	X	X	X	X	
58094	GW	GW50102AS	REAL	GW50103AS	GW	MINI	115/196	X	X	X	X	X	X	
58094	GW	GW50103AS	DUP	GW50102AS	GW	MINI	115/196	X	X	X	X	X	X	
58094	GW	GW50108AS	TB		GW	MINI	115/196			X				
58194	GW	BH00062AS	REAL		GEOTECH	MINI	115/196							X
58294	GW	BH00048AS	REAL		BH	MINI	115/196			X				
58294	GW	BH00049AS	REAL		BH	MINI	115/196			X				
58294	GW	BH00050AS	REAL		BH	MINI	115/196	X	X		X	X		
58394	GEOTECH	BH00223AS	REAL		GEOTECH	WELL	115/196							X
58394	GEOTECH	BH00224AS	REAL		GEOTECH	WELL	115/196							X
58394	GEOTECH	BH00225AS	REAL		GEOTECH	WELL	115/196							X
58394	GEOTECH	BH00226AS	REAL		GEOTECH	WELL	115/196							X
58394	GEOTECH	BH00227AS	REAL		GEOTECH	WELL	115/196							X
58394	GEOTECH	BP00046AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
58494	GW	BH00065AS	REAL		BH	MINI	115/196			X				
58494	GW	BH00066AS	REAL		BH	MINI	115/196			X				
58494	GW	BH00067AS	REAL		BH	MINI	115/196			X				
58494	GW	BH00068AS	REAL		BH	MINI	115/196	X	X		X	X		
58494	GW	BH00069AS	REAL		BH	MINI	115/196			X				
58494	GW	BH00070AS	REAL		BH	MINI	115/196			X				
58494	GW	BH00071AS	REAL		BH	MINI	115/196	X	X		X	X		
58594	GW	BH00063AS	REAL		GEOTECH	MINI	115/196							X
58594	GW	GW50104AS	REAL		GW	MINI	115/196	X	X	X	X	X	X	
58594	GW	GW50109AS	TB		GW	MINI	115/196			X				
58694	GW	BH00051AS	REAL		BH	MINI	115/196			X				
58694	GW	BH00052AS	REAL		BH	MINI	115/196	X	X		X	X		
58794	GW	BH00053AS	REAL		BH	MINI	115/196			X				
58794	GW	BH00054AS	REAL		BH	MINI	115/196	X	X		X	X		
58794	GW	BH00106AS	RNS		BH	MINI	115/196	X	X	X	X	X		
58894	TDEM	BH00064AS	REAL		BH	BH	133	X	X		X	X		
58994	GEOTECH	BH00126AS	REAL		GEOTECH	BH	115/196							X
58994	GEOTECH	BH00127AS	REAL		GEOTECH	BH	115/196							X
59094	GEOTECH	BH00202AS	REAL		GEOTECH	BH	115/196							X
59094	GEOTECH	BH00203AS	REAL		GEOTECH	BH	115/196							X
59094	GEOTECH	BP00023AS	REAL		DRUM	BH	115/196	X	X	X	X	X		
59094	GEOTECH	BP00024AS	RNS		DRUM	BH	115/196	X	X	X	X	X		
59094	GEOTECH	BP00030AS	TB		DRUM	BH	115/196			X				
59194	GEOTECH	BH00238AS	REAL		GEOTECH	WELL	115/196							X
59194	GEOTECH	BH00239AS	REAL		GEOTECH	WELL	115/196							X
59194	GEOTECH	BH00240AS	REAL		GEOTECH	WELL	115/196							X
59194	GEOTECH	BH00241AS	REAL		GEOTECH	WELL	115/196							X
59194	GEOTECH	BH00242AS	REAL		GEOTECH	WELL	115/196							X
59194	GEOTECH	BP00039AS	REAL	BP00040AS	DRUM	WELL	115/196	X	X	X	X	X		
59194	GEOTECH	BP00040AS	DUP	BP00039AS	DRUM	WELL	115/196	X	X	X	X	X		
59194	GEOTECH	BP00041AS	RNS		DRUM	WELL	115/196	X	X	X	X	X		
59194	GEOTECH	BP00052AS	TB		DRUM	WELL	115/196							
59294	GEOTECH	BH00170AS	REAL		GEOTECH	WELL	115/196							X
59294	GEOTECH	BH00171AS	REAL		GEOTECH	WELL	115/196							X
59294	GEOTECH	BH00172AS	REAL		GEOTECH	WELL	115/196							X
59294	GEOTECH	BH00173AS	REAL		GEOTECH	WELL	115/196							X
59294	GEOTECH	BP00003AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
59494	GW	BH00149AS	RNS		BH	BH	115/196	X	X	X	X	X		
59494	GW	BH00150AS	REAL		BH	BH	115/196			X				

Table O-26 (Continued)

Location	TM15 Program	Sample Number	QC Code	QC Partner	Sample Type	Completion Type	IHSS	Analyses Requested						
								Rads	Metals	VOA	SVOA	Pest/PCB	Water	[illegible]
59494	GW	BH00151AS	REAL		BH	BH	115/196			X				
59494	GW	BH00152AS	REAL		BH	BH	115/196	X	X		X	X		
59494	GW	BH00153AS	REAL		BH	BH	115/196			X				
59494	GW	BH00154AS	REAL		BH	BH	115/196			X				
59494	GW	BH00155AS	REAL		BH	BH	115/196	X	X		X	X		
59494	GW	BH00156AS	REAL		BH	BH	115/196			X				
59494	GW	BH00157AS	REAL		BH	BH	115/196			X				
59494	GW	BH00158AS	REAL		BH	BH	115/196			X				
59494	GW	BH00159AS	REAL	BH00160AS	BH	BH	115/196	X	X		X	X		
59494	GW	BH00160AS	DUP	BH00159AS	BH	BH	115/196	X	X		X	X		
59494	GW	BH00165AS	TB		BH	BH	115/196			X				
59594	GEOTECH	BH00132AS	REAL		GEOTECH	WELL	115/196							X
59594	GEOTECH	BH00133AS	REAL		GEOTECH	WELL	115/196							X
59594	GEOTECH	BH00135AS	REAL		GEOTECH	WELL	115/196							X
59594	GEOTECH	BH00136AS	REAL		GEOTECH	WELL	115/196							X
59594	GEOTECH	BH00137AS	REAL		GEOTECH	WELL	115/196							X
59594	GEOTECH	BP00001AS	REAL		DRUM	WELL	115/196			X				
59594	GEOTECH	BP00002AS	REAL		DRUM	WELL	115/196			X				
59594	GEOTECH	BP00006AS	REAL		DRUM	WELL	115/196		X					
59594	GEOTECH	BP00037AS	REAL		DRUM	WELL	115/196		X					
59594	GEOTECH	BP00038AS	RNS		DRUM	WELL	115/196		X					
59694	GEOTECH	BH00211AS	REAL		GEOTECH	WELL	115/196							X
59694	GEOTECH	BH00212AS	REAL		GEOTECH	WELL	115/196							X
59694	GEOTECH	BH00213AS	REAL		GEOTECH	WELL	115/196							X
59694	GEOTECH	BH00214AS	REAL		GEOTECH	WELL	115/196							X
59694	GEOTECH	BH00215AS	REAL		GEOTECH	WELL	115/196							X
59694	GEOTECH	BP00028AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
59694	GEOTECH	BP00031AS	RNS		DRUM	WELL	115/196	X	X					
59794	GEOTECH	BH00178AS	REAL		GEOTECH	WELL	115/196							
59794	GEOTECH	BH00179AS	REAL		GEOTECH	WELL	115/196							X
59794	GEOTECH	BH00180AS	REAL		GEOTECH	WELL	115/196							X
59794	GEOTECH	BP00005AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
59894	GW	BH00161AS	REAL		BH	WELL	115/196			X				
59894	GW	BH00162AS	REAL		BH	WELL	115/196	X	X		X	X		
59894	GW	BH00163AS	RNS		BH	WELL	115/196	X	X	X	X	X		
59894	GW	BH00164AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
59894	GW	BH00166AS	TB		BH	WELL	115/196			X				
59894	GW	BP00007AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
59894	GW	BP00010AS	FB		DRUM	WELL	115/196			X				
59894	GW	BP00011AS	REAL		DRUM	WELL	115/196	X	X	X				
59894	GW	BP00012AS	REAL		DRUM	WELL	115/196	X	X	X				
59894	GW	BP00020AS	TB		DRUM	WELL	115/196			X				
59994	TDEM	BH00088AS	REAL		BH	BH	133	X	X	X	X	X		
60094	TDEM	BH00089AS	REAL		BH	BH	133	X	X					
71194	GEOTECH	BH00182AS	REAL		GEOTECH	WELL	115/196							X
71194	GEOTECH	BH00183AS	REAL		GEOTECH	WELL	115/196							X
71194	GEOTECH	BH00184AS	REAL		GEOTECH	WELL	115/196							X
71194	GEOTECH	BP00008AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
71194	GEOTECH	BP00009AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
71194	GEOTECH	BP00021AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
71194	GEOTECH	BP00025AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
71294	GEOTECH	BH00204AS	REAL		GEOTECH	BH	115/196							X
71294	GEOTECH	BH00205AS	REAL		GEOTECH	BH	115/196							X
71294	GEOTECH	BH00206AS	REAL		GEOTECH	BH	115/196							X
71294	GEOTECH	BH00207AS	REAL		GEOTECH	BH	115/196							X
71294	GEOTECH	BH00208AS	REAL		GEOTECH	BH	115/196							X
71294	GEOTECH	BH00209AS	REAL		GEOTECH	BH	115/196							X
71294	GEOTECH	BH00210AS	REAL		GEOTECH	BH	115/196							
71294	GEOTECH	BP00026AS	REAL		DRUM	BH	115/196	X	X	X	X	X		

Table O-26 (Continued)

Location	TM15 Program	Sample Number	QC Code	QC Partner	Sample Type	Completion Type	IHSS	Analyses Requested						
								Rads	Metals	VOA	SVOA	Pest/PCB	Water Qual	Geotech
71294	GEOTECH	BP00027AS	RNS		DRUM	BH	115/196	X	X	X	X	X		
71394	GW	BH00245AS	REAL		GEOTECH	BH	133							X
71494	GEOTECH	BH00243AS	REAL		GEOTECH	WELL	115/196							X
71494	GEOTECH	BP00042AS	REAL	BP00043AS	DRUM	WELL	115/196	X	X	X	X	X		
71494	GEOTECH	BP00043AS	DUP	BP00042AS	DRUM	WELL	115/196	X	X	X	X	X		
71494	GEOTECH	BP00044AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
71494	GEOTECH	BP00045AS	REAL		DRUM	WELL	115/196	X	X	X	X	X		
71494	GEOTECH	BP00047AS	RNS		DRUM	WELL	115/196	X	X	X	X	X		
71494	GEOTECH	BP00048AS	REAL	BP00049AS	DRUM	WELL	115/196	X	X	X	X	X		
71494	GEOTECH	BP00049AS	DUP	BP00048AS	DRUM	WELL	115/196	X	X	X	X	X		
71494	GEOTECH	BP00050AS	RNS		DRUM	WELL	115/196	X	X	X	X	X		
71494	GEOTECH	BP00051AS	TB		DRUM	WELL	115/196			X				
SS133194	SS	SS00001AS	REAL		SS	SS	115/196	X						
SS133294	SS	SS00002AS	REAL		SS	SS	115/196	X						
SS133394	SS	SS00003AS	REAL		SS	SS	115/196	X						
SS133494	SS	SS00004AS	REAL		SS	SS	115/196	X						
SS133594	SS	SS00005AS	REAL		SS	SS	115/196	X						
SS133694	SS	SS00006AS	REAL		SS	SS	115/196	X						
SS133794	SS	SS00007AS	REAL		SS	SS	115/196	X						
SS133894	SS	SS00008AS	REAL	SS00009AS	SS	SS	115/196	X						
SS133894	SS	SS00009AS	DUP	SS00008AS	SS	SS	115/196	X						
SS133894	SS	SS00010AS	RNS		SS	SS	115/196	X						

Table O-27
Summary of Data Completeness

Sampling Station Type	Number of Sampling Stations	
	Planned	Installed or Sampled
Boreholes	47	48
Monitoring Wells	25	28
Surface Soils	100	105
Surface-Water Stations	22	19
Sediment Stations	15	15
Total	209	215

Overall approximate percent completeness = 103%