

BIPHENYL
03-14-1985

AQUEOUS MIGRATION, METERS

HYD/GRD	DAYS	CLAY	LOAM	SAND	GRAVEL
.001	1	0.00	0.00	0.00	0.87
.001	7	0.00	0.00	0.00	6.06
.001	30	0.00	0.00	0.00	25.97
.001	365	0.00	0.00	0.05	316.19
.01	1	0.00	0.00	0.00	8.66
.01	7	0.00	0.00	0.01	60.60
.01	30	0.00	0.00	0.04	259.71
.01	365	0.00	0.00	0.48	3161.94
.1	1	0.00	0.00	0.01	86.57
.1	7	0.00	0.00	0.09	605.99
.1	30	0.00	0.00	0.39	2597.08
.1	365	0.00	0.04	4.81	31619.45

DAYS TO REACH 3 METER GROUNDWATER, WITH NET INFILTRATION OF 40 CM/YR
BY VAPOR DIFFUSION AND/OR AQUEOUS MIGRATION

C/C0	CLAY	LOAM	SAND	GRAVEL
.000001	140.6	1335.1	215.3	12.5
.00001	171.6	1630.8	262.4	15.3
.0001	220.1	2094.5	335.7	19.7
.001	304.7	2905.7	462.9	27.4
.01	486.3	4656.5	732.2	44.1
.1	1103.2	10714.9	1615.5	103.4
.2	1684.8	16573.2	2409.6	162.8
.4	3171.6	32141.3	4306.3	329.9
.8	9617.3	107227.4	11300.7	1297.5

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VAPOR DIFFUSION, X=METERS TO C/C0

C/C0	DAYS	CLAY	LOAM	SAND	GRAVEL
.000001	1	0.251	0.082	0.202	0.844
.000001	7	0.664	0.216	0.534	2.233
.000001	30	1.374	0.447	1.106	4.624
.000001	365	4.795	1.559	3.861	16.133
.00001	1	0.227	0.074	0.183	0.763
.00001	7	0.600	0.195	0.483	2.018
.00001	30	1.242	0.404	1.000	4.177
.00001	365	4.332	1.408	3.488	14.575
.0001	1	0.200	0.065	0.161	0.671
.0001	7	0.528	0.172	0.425	1.776
.0001	30	1.093	0.355	0.880	3.677
.0001	365	3.814	1.240	3.070	12.831
.001	1	0.169	0.055	0.136	0.568
.001	7	0.446	0.145	0.359	1.502
.001	30	0.924	0.300	0.744	3.109
.001	365	3.224	1.048	2.596	10.848
.01	1	0.132	0.043	0.106	0.444
.01	7	0.349	0.114	0.281	1.176
.01	30	0.723	0.235	0.582	2.434
.01	365	2.524	0.821	2.032	8.493
.1	1	0.084	0.027	0.068	0.284
.1	7	0.223	0.073	0.180	0.751
.1	30	0.462	0.150	0.372	1.555
.1	365	1.612	0.524	1.298	5.424
.2	1	0.066	0.021	0.053	0.221
.2	7	0.174	0.057	0.140	0.585
.2	30	0.360	0.117	0.290	1.211
.2	365	1.256	0.408	1.011	4.226
.4	1	0.043	0.014	0.035	0.145
.4	7	0.114	0.037	0.092	0.384
.4	30	0.236	0.077	0.190	0.795
.4	365	0.825	0.268	0.664	2.775
.8	1	0.013	0.004	0.010	0.044
.8	7	0.034	0.011	0.028	0.116
.8	30	0.071	0.023	0.057	0.239
.8	365	0.248	0.081	0.200	0.835

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APPENDIX A.

'MIGRT' SOIL AND GROUNDWATER CPD MIGRATION ESTIMATES

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MOLECULAR WEIGHT IS 154
WATER SOLUB IN mg/L IS 6
VAPOR PRESS IN mm Hg IS .1
INPUT KOW ?N
IS COMPOUND A LIQUID ?N
DO YOU HAVE AN MP ?Y
MP IN DEG C IS : 71

KOW= 10150.92 LOG(KOW)= 4.006 Banerjee/Yalkowski '80,EQ 6
KOC= 6395.08 LOG(KOC)= 3.805 Karickhoff/Brown '79,EQ 5
BCF= 507.51 LOG(BCF)= 2.705 Veith/Defoe '79
KWA= 7.11
DIF-AIR = 0.806E-01

SOIL CONDITIONS & SOIL/CHEMICAL PARAMETERS

	CLAY	LOAM	SAND	GRAVEL
POROSITY	0.40	0.50	0.30	0.50
AIR FRACTION	0.20	0.25	0.15	0.25
WATER FRACTION	0.20	0.25	0.15	0.25
BULK DENSITY	1.50	1.25	1.75	1.25
PERMEABILITY	0.1E-06	0.1E-03	0.1E-02	0.1E+01
ORGANIC CARBON	0.0010	0.0145	0.0010	0.0001
RF-SOIL COLUMN	0.0654 *	0.0069	0.0457	0.5010
DIF-SOIL	0.152E-03	0.161E-04	0.987E-04	0.172E-02
FRAC IN AIR	0.003	0.000	0.002	0.032
FRAC IN WATER	0.020	0.002	0.013	0.231
FRAC IN SOLIDS	0.977	0.998	0.985	0.737
CO-SOIL TOTAL	58.924	697.176	68.175	6.507
C/CO FOR 1 PPM	0.01697	0.00143	0.01467	0.15368

VAPOR MIGRATION, MICROGRAMS/SQ CM, ZERO TIME(C=0) TO GIVEN TIME

DAYS	CLAY	LOAM	SAND	GRAVEL
1	0.690	0.280	0.417	2.903
7	1.826	0.742	1.103	7.680
30	3.781	1.536	2.283	15.899
365	13.192	5.360	7.966	55.477

STEADY STATE FLUX THROUGH 1 METER SOIL, MICROGRAMS/SQ CM/DAY

CLAY	LOAM	SAND	GRAVEL
1.55	2.42	0.87	2.42

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