

CASE 4:

PESTAN
version 4.0, 1992.

Developed by :

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Title: Valencia Aldaia

Solubility (mg/l)	0.14000E+01
Recharge rate (cm/hr).....	0.51400E-02
Sorption constant (cc/g).....	0.21960E+01
Saturated water content	0.41000E+00
Solid-phase decay (/hr)	0.63000E-01
Liquid-phase decay (/hr)	0.10000E-02
Curve coefficient	0.43800E+01
Bulk density (g/cc).....	0.16200E+01
Dispersion coefficient (cm ² /hr).....	0.60000E-01
Saturated hydraulic conductivity	0.14590E+02
Minimum depth (cm).....	0.00000E+00
Maximum depth (cm).....	0.50000E+03
Minimum time (day).....	0.00000E+00
Maximum time (day).....	0.80000E+04

For application 1 the active ingredient (ai) applied is 0.200E+01 kg
ai/ha,
and has been applied 0.000E+00 days prior to recharge

Results

Projected water content	0.209E+00
Pore water velocity [cm/hr]	0.246E-01
Pollutant velocity [cm/hr]	0.136E-02
Length of pollutant slug [cm]	0.379E+01
Mass decayed prior to recharge [kg]	0.000E+00

Time = 0.50E+02 (days)

Depth [cm]	Cw [mg/l]	Cs [mg/kg]	Ctot [mg/l]
5.000	0.15E+00	0.32E+00	0.55E+00
50.000	0.00E+00	0.00E+00	0.00E+00
100.000	0.00E+00	0.00E+00	0.00E+00
150.000	0.00E+00	0.00E+00	0.00E+00
200.000	0.00E+00	0.00E+00	0.00E+00
250.000	0.00E+00	0.00E+00	0.00E+00
300.000	0.00E+00	0.00E+00	0.00E+00
350.000	0.00E+00	0.00E+00	0.00E+00
400.000	0.00E+00	0.00E+00	0.00E+00
450.000	0.00E+00	0.00E+00	0.00E+00
500.000	0.00E+00	0.00E+00	0.00E+00

MASS BALANCE RESULTS

Pollutant remaining in liquid-phase (kg) = 0.136E+00
 Pollutant remaining in solid-phase (kg) = 0.232E+01
 Total mass of pollutant remaining (kg) = 0.246E+01
 Liquid-phase decay of pollutant (kg) = 0.169E+00

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Time = 0.10E+03 (days)

Depth [cm]	Cw [mg/l]	Cs [mg/kg]	Ctot [mg/l]
5.000	0.31E+00	0.67E+00	0.12E+01
50.000	0.00E+00	0.00E+00	0.00E+00
100.000	0.00E+00	0.00E+00	0.00E+00
150.000	0.00E+00	0.00E+00	0.00E+00
200.000	0.00E+00	0.00E+00	0.00E+00
250.000	0.00E+00	0.00E+00	0.00E+00
300.000	0.00E+00	0.00E+00	0.00E+00
350.000	0.00E+00	0.00E+00	0.00E+00
400.000	0.00E+00	0.00E+00	0.00E+00
450.000	0.00E+00	0.00E+00	0.00E+00
500.000	0.00E+00	0.00E+00	0.00E+00

MASS BALANCE RESULTS

Pollutant remaining in liquid-phase (kg) = 0.990E-01
 Pollutant remaining in solid-phase (kg) = 0.169E+01
 Total mass of pollutant remaining (kg) = 0.179E+01
 Liquid-phase decay of pollutant (kg) = 0.254E+00

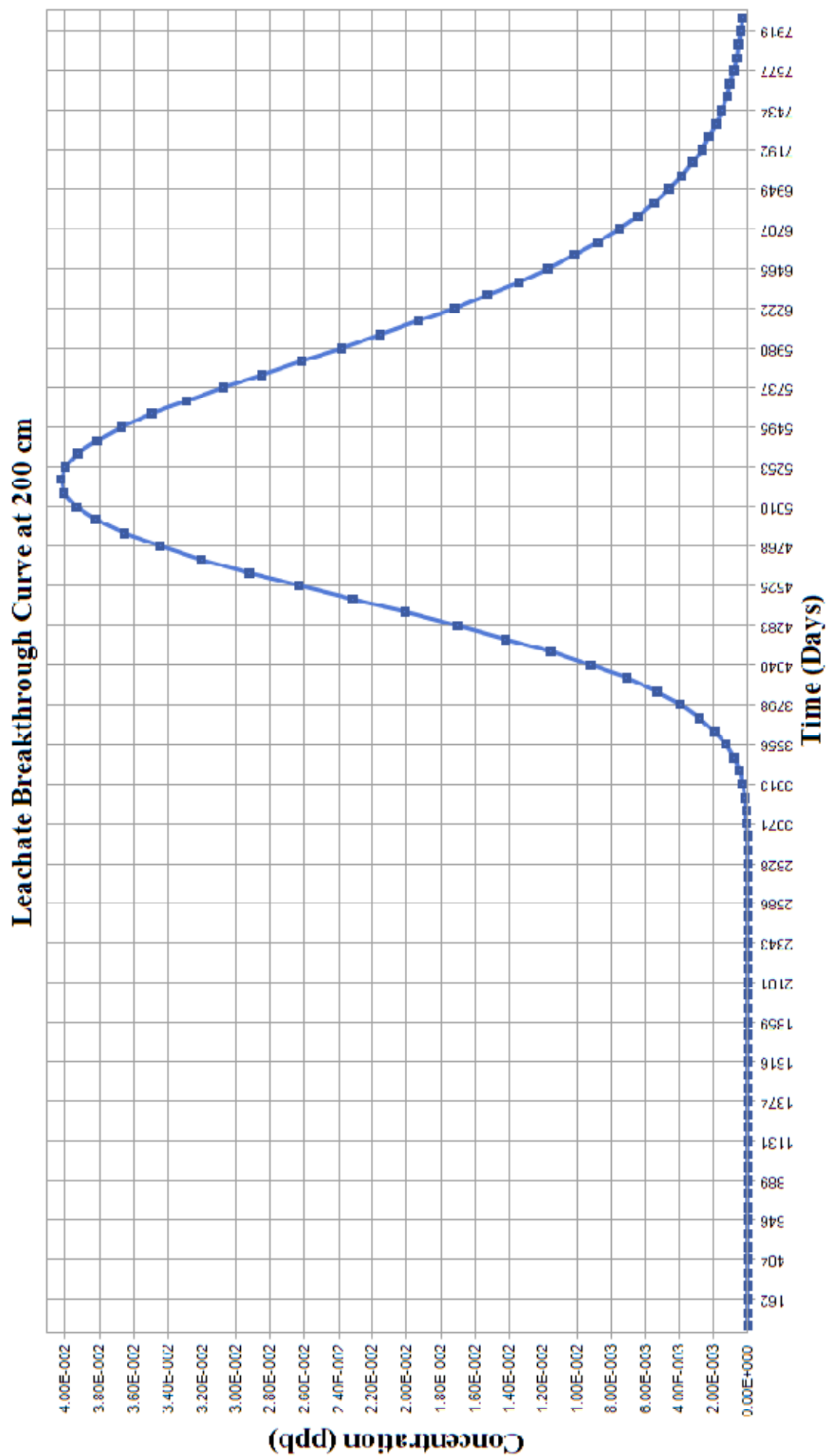
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Time = 0.15E+03 (days)

Depth [cm]	Cw [mg/l]	Cs [mg/kg]	Ctot [mg/l]
5.000	0.32E+00	0.70E+00	0.12E+01
50.000	0.00E+00	0.00E+00	0.00E+00
100.000	0.00E+00	0.00E+00	0.00E+00
150.000	0.00E+00	0.00E+00	0.00E+00
200.000	0.00E+00	0.00E+00	0.00E+00
250.000	0.00E+00	0.00E+00	0.00E+00
300.000	0.00E+00	0.00E+00	0.00E+00
350.000	0.00E+00	0.00E+00	0.00E+00
400.000	0.00E+00	0.00E+00	0.00E+00
450.000	0.00E+00	0.00E+00	0.00E+00
500.000	0.00E+00	0.00E+00	0.00E+00

MASS BALANCE RESULTS

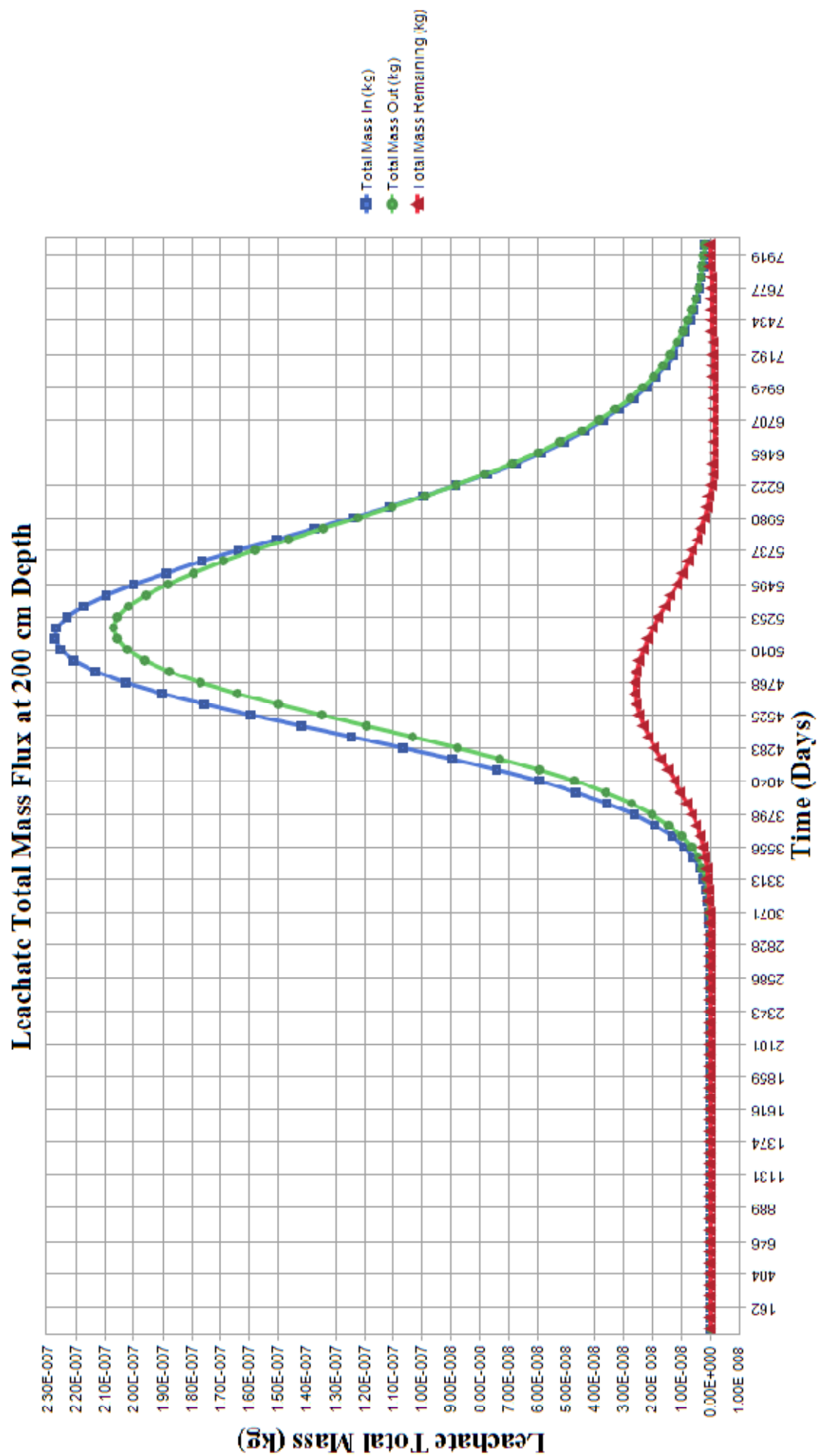
Pollutant remaining in liquid-phase (kg) = 0.878E-01
 Pollutant remaining in solid-phase (kg) = 0.150E+01
 Total mass of pollutant remaining (kg) = 0.159E+01
 Liquid-phase decay of pollutant (kg) = 0.350E+00



Case 4 – Valencia Alcala – Chlorpyrifos – waste Application 2 [kg/ha] – Loamy Sand

1.000000E-30	0.000000E+00
80.80808	0.000000E+00
161.6162	0.000000E+00
242.4243	0.000000E+00
323.2323	0.000000E+00
404.0404	0.000000E+00
484.8485	0.000000E+00
565.6566	0.000000E+00
646.4647	0.000000E+00
727.2728	0.000000E+00
808.0808	0.000000E+00
888.8889	0.000000E+00
969.6970	0.000000E+00
1050.505	0.000000E+00
1131.313	0.000000E+00
1212.121	0.000000E+00
1292.929	0.000000E+00
1373.737	0.000000E+00
1454.546	0.000000E+00
1535.354	0.000000E+00
1616.162	0.000000E+00
1696.970	0.000000E+00
1777.778	0.000000E+00
1858.586	0.000000E+00
1939.394	0.000000E+00
2020.202	0.000000E+00
2101.010	0.000000E+00
2181.818	0.000000E+00
2262.626	0.000000E+00
2343.434	0.000000E+00
2424.242	0.000000E+00
2505.051	0.000000E+00
2585.859	0.000000E+00
2666.667	0.000000E+00
2747.475	0.000000E+00
2828.283	0.000000E+00
2909.091	1.7479222E-05
2989.899	2.2764303E-05
3070.707	4.6533398E-05
3151.515	9.1190072E-05
3232.323	1.6949839E-04
3313.131	2.9988287E-04
3393.939	5.0703750E-04
3474.748	8.2180207E-04
3555.556	1.2811734E-03
3636.364	1.9244164E-03
3717.172	2.7927971E-03
3797.980	3.9260075E-03
3878.788	5.3540915E-03
3959.596	7.0983041E-03
4040.404	9.1637606E-03
4121.212	1.1537676E-02
4202.021	1.4188156E-02
4282.829	1.7062979E-02
4363.636	2.0093881E-02
4444.444	2.3197522E-02
4525.252	2.6281660E-02
4606.061	2.9250009E-02
4686.869	3.2008406E-02
4767.677	3.4469843E-02
4848.485	3.6559626E-02
4929.293	3.8218562E-02
5010.101	3.9406247E-02
5090.909	4.0101241E-02
5171.717	4.0301379E-02
5252.525	4.0022481E-02
5333.333	3.9295647E-02
5414.142	3.8164932E-02
5494.950	3.6683545E-02
5575.758	3.4911033E-02
5656.566	3.2909639E-02

5737.374	3.0741675E-02
5818.182	2.8466964E-02
5898.990	2.6140880E-02
5979.798	2.3812918E-02
6060.606	2.1525806E-02
6141.414	1.9314926E-02
6222.222	1.7208198E-02
6303.030	1.5226766E-02
6383.838	1.3385199E-02
6464.646	1.1692121E-02
6545.455	1.0151139E-02
6626.263	8.7616537E-03
6707.071	7.5196796E-03
6787.879	6.4186514E-03
6868.687	5.4500727E-03
6949.495	4.6042106E-03
7030.303	3.8706115E-03
7111.111	3.2385241E-03
7191.919	2.6972946E-03
7272.728	2.2366080E-03
7353.536	1.8466903E-03
7434.344	1.5184589E-03
7515.152	1.2435787E-03
7595.960	1.0145225E-03
7676.768	8.2455936E-04
7757.576	6.6773448E-04
7838.384	5.3883699E-04
7919.192	4.3334023E-04
8000.000	3.4734581E-04

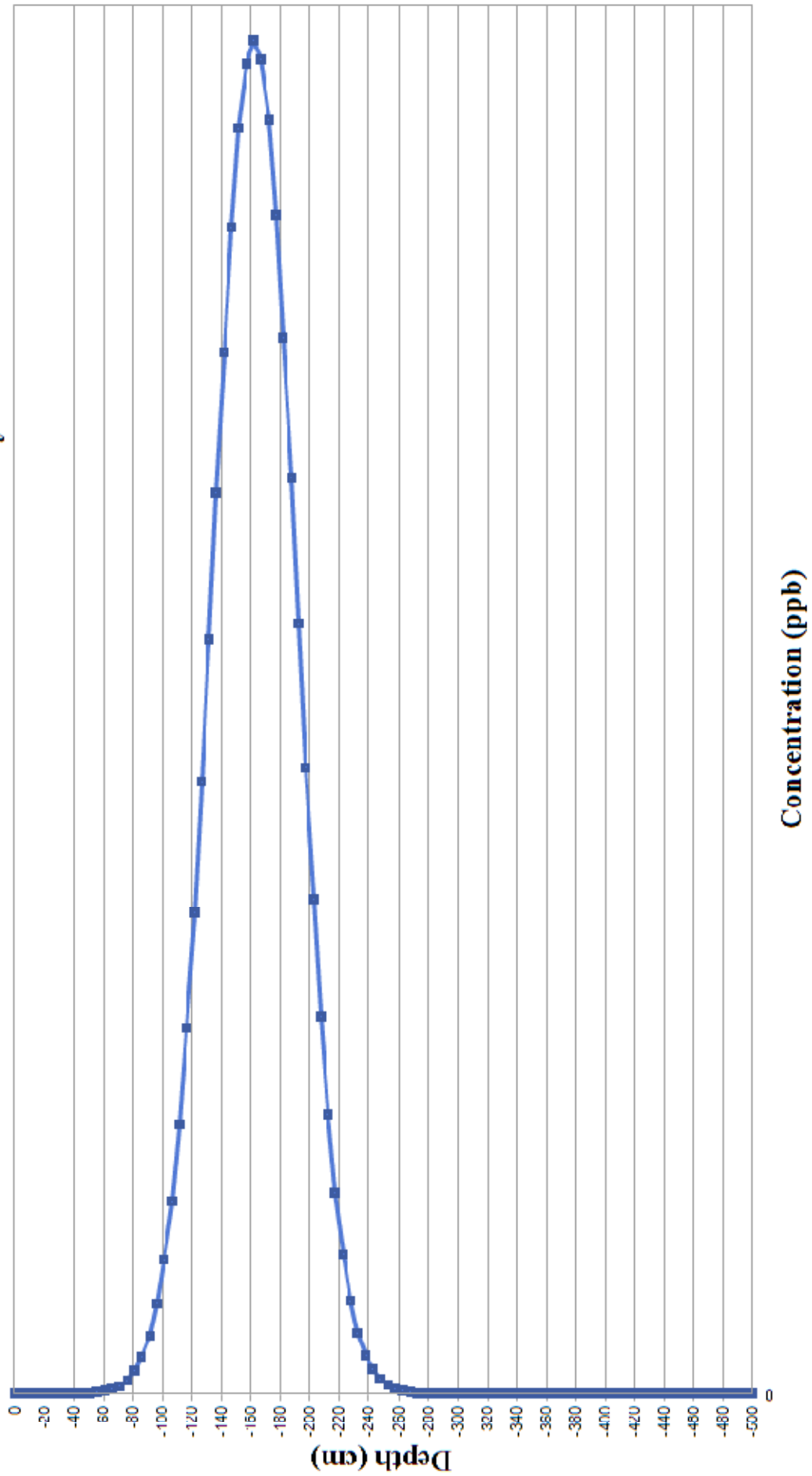


Case 4 – Valencia Aldaia – Chlorpyrifos – Waste Application 2 [kg/ha] – Loamy Sand

1.000000E-30	0.000000E+00	0.000000E+00	0.000000E+00
80.80808	0.000000E+00	0.000000E+00	0.000000E+00
161.6162	0.000000E+00	0.000000E+00	0.000000E+00
242.4243	0.000000E+00	0.000000E+00	0.000000E+00
323.2323	0.000000E+00	0.000000E+00	0.000000E+00
404.0404	0.000000E+00	0.000000E+00	0.000000E+00
484.8485	0.000000E+00	0.000000E+00	0.000000E+00
565.6566	0.000000E+00	0.000000E+00	0.000000E+00
646.4647	0.000000E+00	0.000000E+00	0.000000E+00
727.2728	0.000000E+00	0.000000E+00	0.000000E+00
808.0808	0.000000E+00	0.000000E+00	0.000000E+00
888.8889	0.000000E+00	0.000000E+00	0.000000E+00
969.6970	2.8025969E-44	0.000000E+00	2.8025969E-44
1050.505	3.7364923E-40	0.000000E+00	3.7364923E-40
1131.313	1.2342497E-36	0.000000E+00	1.2342497E-36
1212.121	1.3089547E-33	0.000000E+00	1.3089547E-33
1292.929	5.5142238E-31	0.000000E+00	5.5142238E-31
1373.737	1.0859179E-28	0.000000E+00	1.0859179E-28
1454.546	1.1346326E-26	0.000000E+00	1.1346326E-26
1535.354	6.9517376E-25	0.000000E+00	6.9517376E-25
1616.162	2.7055891E-23	0.000000E+00	2.7055891E-23
1696.970	7.1367103E-22	0.000000E+00	7.1367103E-22
1777.778	1.3452680E-20	0.000000E+00	1.3452680E-20
1858.586	1.8932750E-19	0.000000E+00	1.8932750E-19
1939.394	2.0633009E-18	0.000000E+00	2.0633009E-18
2020.202	1.7954241E-17	0.000000E+00	1.7954241E-17
2101.010	1.2802366E-16	0.000000E+00	1.2802366E-16
2181.818	7.6475884E-16	0.000000E+00	7.6475884E-16
2262.626	3.9003313E-15	0.000000E+00	3.9003313E-15
2343.434	1.7262299E-14	0.000000E+00	1.7262299E-14
2424.242	6.7245241E-14	0.000000E+00	6.7245241E-14
2505.051	2.3341924E-13	0.000000E+00	2.3341924E-13
2585.859	7.2980191E-13	0.000000E+00	7.2980191E-13
2666.667	2.0747792E-12	0.000000E+00	2.0747792E-12
2747.475	5.4082914E-12	0.000000E+00	5.4082914E-12
2828.283	1.3022067E-11	0.000000E+00	1.3022067E-11
2909.091	1.1899579E-10	8.9843195E-11	2.9152594E-11
2989.899	1.7804538E-10	1.1700851E-10	6.1036870E-11
3070.707	3.5932282E-10	2.3918165E-10	1.2014117E-10
3151.515	6.9207945E-10	4.6871695E-10	2.2336251E-10
3232.323	1.2651133E-09	8.7122171E-10	3.9389167E-10
3313.131	2.2027518E-09	1.5413980E-09	6.6135381E-10
3393.939	3.6670584E-09	2.6061726E-09	1.0608858E-09
3474.748	5.8549565E-09	4.2240624E-09	1.6308942E-09
3555.556	8.9947019E-09	6.5852315E-09	2.4094702E-09
3636.364	1.3321241E-08	9.8915001E-09	3.4297405E-09
3717.172	1.9069647E-08	1.4354976E-08	4.7146709E-09
3797.980	2.6451634E-08	2.0179678E-08	6.2719554E-09
3878.788	3.5610057E-08	2.7520031E-08	8.0900273E-09
3959.596	4.6620848E-08	3.6485282E-08	1.0135567E-08
4040.404	5.9455200E-08	4.7101729E-08	1.2353472E-08
4121.212	7.3972615E-08	5.9303655E-08	1.4668961E-08
4202.021	8.9919304E-08	7.2927122E-08	1.6992182E-08
4282.829	1.0692826E-07	8.7703711E-08	1.9224553E-08
4363.636	1.2454856E-07	1.0328255E-07	2.1266013E-08
4444.444	1.4225814E-07	1.1923527E-07	2.3022881E-08
4525.252	1.5950231E-07	1.3508773E-07	2.4414575E-08
4606.061	1.7572447E-07	1.5034504E-07	2.5379418E-08
4686.869	1.9040189E-07	1.6452321E-07	2.5878681E-08
4767.677	2.0307299E-07	1.7717498E-07	2.5897998E-08
4848.485	2.1336393E-07	1.8791648E-07	2.5447441E-08
4929.293	2.2100241E-07	1.9644339E-07	2.4559018E-08
5010.101	2.2583153E-07	2.0254811E-07	2.3283425E-08
5090.909	2.2780546E-07	2.0612038E-07	2.1685082E-08
5171.717	2.2698639E-07	2.0714909E-07	1.9837296E-08
5252.525	2.2353277E-07	2.0571555E-07	1.7817207E-08
5333.333	2.1768059E-07	2.0197962E-07	1.5700973E-08
5414.142	2.0972772E-07	1.9616775E-07	1.3559964E-08
5494.950	2.0001110E-07	1.8855341E-07	1.1457687E-08
5575.758	1.8889038E-07	1.7944271E-07	9.4476764E-09
5656.566	1.7672788E-07	1.6915554E-07	7.5723365E-09

5737.374	1.6387492E-07	1.5801220E-07	5.8627139E-09
5818.182	1.5065901E-07	1.4632019E-07	4.3388089E-09
5898.990	1.3737477E-07	1.3436413E-07	3.0106386E-09
5979.798	1.2427793E-07	1.2239839E-07	1.8795367E-09
6060.606	1.1158233E-07	1.1064264E-07	9.3969066E-10
6141.414	9.9458461E-08	9.9278722E-08	1.7973684E-10
6222.222	8.8034547E-08	8.8450136E-08	-4.1559228E-10
6303.030	7.7401431E-08	7.8265572E-08	-8.6413854E-10
6383.838	6.7614963E-08	6.8799920E-08	-1.1849576E-09
6464.646	5.8700177E-08	6.0097499E-08	-1.3973203E-09
6545.455	5.0656947E-08	5.2176851E-08	-1.5199044E-09
6626.263	4.3464727E-08	4.5034898E-08	-1.5701704E-09
6707.071	3.7087194E-08	3.8651152E-08	-1.5639592E-09
6787.879	3.1476617E-08	3.2991867E-08	-1.5152513E-09
6868.687	2.6577290E-08	2.8013375E-08	-1.4360851E-09
6949.495	2.2329090E-08	2.3665642E-08	-1.3365531E-09
7030.303	1.8670031E-08	1.9894943E-08	-1.2249125E-09
7111.111	1.5538289E-08	1.6646014E-08	-1.1077262E-09
7191.919	1.2874041E-08	1.3864094E-08	-9.9005248E-10
7272.728	1.0620520E-08	1.1496165E-08	-8.7564456E-10
7353.536	8.7248360E-09	9.4919885E-09	-7.6715223E-10
7434.344	7.1385555E-09	7.8048785E-09	-6.6632322E-10
7515.152	5.8178231E-09	6.3919945E-09	-5.7417132E-10
7595.960	4.7235003E-09	5.2146456E-09	-4.9114540E-10
7676.768	3.8209671E-09	4.2382351E-09	-4.1726786E-10
7757.576	3.0799061E-09	3.4321550E-09	-3.5224901E-10
7838.384	2.4740359E-09	2.7696223E-09	-2.9558636E-10
7919.192	1.9807240E-09	2.2273687E-09	-2.4664459E-10
8000.000	1.5806445E-09	1.7853574E-09	-2.0471293E-10

Leachate Concentration Profile at 5000 Days



0.0000000E+00	-1.0000000E-30
0.0000000E+00	-5.050505
0.0000000E+00	-10.10101
0.0000000E+00	-15.15152
0.0000000E+00	-20.20202
8.1448724E-07	-25.25253
1.9004702E-06	-30.30303
4.3439318E-06	-35.35353
9.5023506E-06	-40.40404
2.0144984E-05	-45.45455
4.1321651E-05	-50.50505
8.2208913E-05	-55.55556
1.5855352E-04	-60.60606
2.9603895E-04	-65.65657
5.3544389E-04	-70.70707
9.3801774E-04	-75.75758
1.5916167E-03	-80.80808
2.6158614E-03	-85.85859
4.1638757E-03	-90.90910
6.4197886E-03	-95.95959
9.5866770E-03	-101.0101
1.3865667E-02	-106.0606
1.9424055E-02	-111.1111
2.6355123E-02	-116.1616
3.4635149E-02	-121.2121
4.4085477E-02	-126.2626
5.4350242E-02	-131.3131
6.4898558E-02	-136.3636
7.5057879E-02	-141.4141
8.4078349E-02	-146.4646
9.1221809E-02	-151.5152
9.5860355E-02	-156.5657
9.7568482E-02	-161.6162
9.6184067E-02	-166.6667
9.1838934E-02	-171.7172
8.4933072E-02	-176.7677
7.6076932E-02	-181.8182
6.6001751E-02	-186.8687
5.5460878E-02	-191.9192
4.5138285E-02	-196.9697
3.5582017E-02	-202.0202
2.7167058E-02	-207.0707
2.0090034E-02	-212.1212
1.4389492E-02	-217.1717
9.9824639E-03	-222.2222
6.7074113E-03	-227.2727
4.3651084E-03	-232.3232
2.7515006E-03	-237.3737
1.6798527E-03	-242.4243
9.9334866E-04	-247.4747
5.6894647E-04	-252.5253
3.1558666E-04	-257.5758
1.6957623E-04	-262.6263
8.8290413E-05	-267.6768
4.4525299E-05	-272.7273
2.1719659E-05	-277.7778
1.0262539E-05	-282.8283
4.7240260E-06	-287.8788
2.0633677E-06	-292.9293
9.2308551E-07	-297.9798
7.6018807E-07	-303.0303
0.0000000E+00	-308.0808
0.0000000E+00	-313.1313
0.0000000E+00	-318.1818
0.0000000E+00	-323.2323
0.0000000E+00	-328.2828
0.0000000E+00	-333.3333
0.0000000E+00	-338.3839
0.0000000E+00	-343.4344
0.0000000E+00	-348.4849
0.0000000E+00	-353.5354

0.000000E+00	-358.5859
0.000000E+00	-363.6364
0.000000E+00	-368.6869
0.000000E+00	-373.7374
0.000000E+00	-378.7879
0.000000E+00	-383.8384
0.000000E+00	-388.8889
0.000000E+00	-393.9394
0.000000E+00	-398.9899
0.000000E+00	-404.0404
0.000000E+00	-409.0909
0.000000E+00	-414.1414
0.000000E+00	-419.1919
0.000000E+00	-424.2424
0.000000E+00	-429.2929
0.000000E+00	-434.3434
0.000000E+00	-439.3940
0.000000E+00	-444.4445
0.000000E+00	-449.4950
0.000000E+00	-454.5455
0.000000E+00	-459.5960
0.000000E+00	-464.6465
0.000000E+00	-469.6970
0.000000E+00	-474.7475
0.000000E+00	-479.7980
0.000000E+00	-484.8485
0.000000E+00	-489.8990
0.000000E+00	-494.9495
0.000000E+00	-500.0000