

Table S5. Leachate concentrations (µg/g) from sediment core leaching experiment normalized for both the volume of leachate recovered and mass of sample residue leached. Leachate solution blanks were also measured and reported as mg/L. Detection limits were also included at the bottom of the table for each element. [-] denote below detection limits. [NM] denotes not measured.

Sample Name	Leachate Solution	Al	Ba	Ca	Fe	K	Mg	Mn	Na	P	S	Si	Sr	Ti	pH
DC-W1 3-5 cm	H ₂ O	-	4.7	736	-	213	154	0.8	394	0.4	1663	29	34.7	-	8.17
	NH ₄ OAc	-	50.5	5954	-	165	380	16.0	61	1.7	217	23	184.4	-	8.27
	Na ₄ P ₂ O ₇ .10H ₂ O	19.4	11.9	851	445.0	50	273	12.3	115005	57562.5	457	118	246.7	2.8	10.44
	HOAc	1.7	27.1	94653	-	106	2919	39.2	31944	466.5	4199	381	2177.1	-	4.54
	HCl	0.5	4.7	24468	-	33	563	2.6	2362	428.1	843	144	516.9	-	4.32
DC-W1 13-15 cm	H ₂ O	-	3.6	728	-	113	95	0.7	220	0.3	1037	22	26.8	-	7.98
	NH ₄ OAc	-	25.0	5342	-	74	186	11.5	35	2.2	232	16	131.8	-	8.30
	Na ₄ P ₂ O ₇ .10H ₂ O	7.2	11.0	690	153.4	32	229	4.1	112384	52266.3	590	54	257.7	1.5	10.63
	HOAc	1.4	21.8	79648	-	68	2336	16.1	31487	457.4	4081	176	1706.1	-	4.46
	HCl	0.6	4.1	23588	-	21	505	1.2	1232	818.6	822	78	489.8	-	4.34
DC-W1 23-25 cm	H ₂ O	-	3.4	772	-	101	90	0.8	182	0.2	1160	23	26.1	-	8.03
	NH ₄ OAc	-	21.5	5144	-	61	153	6.1	30	2.3	271	14	109.1	-	8.33
	Na ₄ P ₂ O ₇ .10H ₂ O	9.1	13.0	470	73.8	46	229	2.7	113473	51333.3	1044	48	320.3	1.5	10.83
	HOAc	3.5	111.4	97657	6.1	84	3578	34.8	35334	339.6	5083	135	3093.1	-	4.57
	HCl	2.2	5.4	27993	1.6	18	340	7.6	975	10933.9	835	123	263.1	-	3.78
DC-W2 2-4 cm	H ₂ O	-	2.5	2029	-	266	368	7.7	386	0.5	2283	54	55.1	-	7.40
	NH ₄ OAc	-	61.2	2899	-	256	352	18.0	51	2.5	173	35	88.7	-	8.06
	Na ₄ P ₂ O ₇ .10H ₂ O	106.0	15.1	606	1303.7	101	153	29.6	126543	69059.3	211	456	9.5	8.7	9.70
	HOAc	74.6	7.2	2134	96.4	70	1109	11.5	5357	455.3	70	403	5.9	-	3.32
	HCl	473.9	28.2	1583	593.4	116	697	9.7	227	535.0	68	634	6.0	-	1.94
DC-W2 10-12 cm	H ₂ O	-	3.6	635	-	232	163	1.2	470	0.7	1403	38	28.2	-	7.91
	NH ₄ OAc	-	68.1	5422	-	293	443	25.2	81	1.7	560	37	145.9	-	8.23
	Na ₄ P ₂ O ₇ .10H ₂ O	77.8	9.6	1317	1913.6	108	115	36.5	133613	69289.7	348	276	13.9	9.6	9.76
	HOAc	61.8	6.7	3975	86.9	87	1598	29.5	4319	373.3	146	326	9.8	-	3.35
	HCl	742.5	37.7	1848	1018.3	185	829	14.7	186	614.3	110	1188	7.2	0.5	1.87
DC-W2 16-18 cm	H ₂ O	0.3	2.0	354	0.4	204	88	1.0	412	1.0	460	38	14.8	-	8.16
	NH ₄ OAc	-	63.5	5297	-	306	392	35.4	81	2.4	300	40	132.0	-	8.30
	Na ₄ P ₂ O ₇ .10H ₂ O	65.9	7.1	1255	1040.9	104	119	40.8	131938	70384.5	232	281	10.4	6.3	9.72
	HOAc	50.7	6.4	3917	138.7	88	1591	28.7	3812	202.5	143	367	8.5	-	3.32
	HCl	693.7	32.7	1629	1075.3	169	665	13.1	182	545.0	92	1125	6.3	0.4	1.86
DC-PLAYA 2-4 cm	H ₂ O	-	2.4	714	-	262	146	2.3	417	1.6	1248	55	20.0	-	7.85
	NH ₄ OAc	0.6	66.1	6245	0.9	382	393	43.9	80	2.8	206	45	106.5	-	8.25
	Na ₄ P ₂ O ₇ .10H ₂ O	70.8	9.6	1706	1593.0	132	78	89.1	140592	72639.1	125	251	17.4	4.5	9.83
	HOAc	67.1	4.4	2269	115.5	113	733	26.2	4777	322.2	63	558	8.0	-	3.32
	HCl	795.0	21.8	1374	514.3	206	578	15.9	192	503.7	45	1264	6.4	-	1.94
DC-PLAYA 8-10 cm	H ₂ O	-	2.3	639	-	237	111	0.2	404	1.3	914	52	14.6	-	7.92
	NH ₄ OAc	-	70.3	6056	0.5	416	382	50.7	78	2.4	170	43	85.3	-	8.25
	Na ₄ P ₂ O ₇ .10H ₂ O	187.3	9.2	1433	1456.7	206	118	84.3	148441	67889.4	97	601	9.1	5.3	9.77
	HOAc	86.3	3.8	1693	73.4	100	559	23.5	3547	396.5	52	489	5.2	-	3.22
	HCl	799.4	18.3	1313	514.4	213	640	17.0	179	461.2	42	1214	5.2	-	1.86
DC-PLAYA 14-16 cm	H ₂ O	-	1.2	2132	-	232	143	2.5	377	0.6	2073	33	20.3	-	7.71
	NH ₄ OAc	-	57.2	5522	-	386	230	39.0	60	1.7	150	27	45.7	-	8.21
	Na ₄ P ₂ O ₇ .10H ₂ O	85.7	10.2	921	420.5	133	65	66.3	130137	72946.9	59	191	6.6	2.9	9.83
	HOAc	247.8	2.0	1943	88.9	136	526	30.5	7126	1655.8	53	1073	4.6	-	3.43
	HCl	1235.7	21.6	1769	439.8	328	788	30.6	408	952.5	51	2206	5.9	0.4	1.82
DA-W1 2-4 cm	H ₂ O	1.3	0.2	399	-	86	48	-	585	1.2	491	24	10.0	-	8.68
	NH ₄ OAc	-	1.9	5407	1.4	23	53	2.6	84	12.6	223	9	69.8	-	8.34
	Na ₄ P ₂ O ₇ .10H ₂ O	8.3	3.6	210	9.5	53	34	-	97493	35500.8	1307	58	215.8	-	10.96
	HOAc	2.8	36.1	115199	2.6	303	1630	29.2	47687	160.5	10606	44	2883.5	-	4.85
	HCl	0.8	5.1	16157	0.4	23	155	0.9	1165	179.0	882	54	264.9	-	4.50

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Sample Name	Leachate Solution	Al	Ba	Ca	Fe	K	Mg	Mn	Na	P	S	Si	Sr	Ti	pH
DA-W1 8-10 cm	H ₂ O	0.3	0.9	461	-	121	48	-	488	0.2	608	15	12.0	-	8.43
	NH ₄ OAc	-	6.4	5568	1.2	40	78	4.1	51	3.7	246	9	79.6	-	8.38
	Na ₄ P ₂ O ₇ .10H ₂ O	13.7	3.2	309	30.6	73	73	0.6	99889	39122.5	1243	45	210.8	0.8	11.01
	HOAc	3.1	23.6	105237	3.3	236	2206	12.4	39672	203.3	9279	75	2248.5	-	4.82
	HCl	0.8	4.0	16166	0.7	24	228	0.8	1176	266.2	903	44	250.3	-	4.61
DA-W1 12-14 cm	H ₂ O	0.4	1.3	289	-	452	50	0.2	725	0.7	790	39	9.1	-	8.26
	NH ₄ OAc	-	53.8	4900	-	619	342	12.0	130	1.4	195	36	105.9	-	8.30
	Na ₄ P ₂ O ₇ .10H ₂ O	89.0	9.6	737	202.3	187	81	13.3	133710	64653.9	235	298	40.7	9.6	9.96
	HOAc	528.9	1.2	5056	203.8	167	319	27.5	8987	6434.9	221	1024	32.2	3.5	3.32
	HCl	760.8	15.9	2113	620.4	265	628	22.5	358	813.4	106	1555	16.7	1.0	1.88
CSW 2-4 cm	H ₂ O	-	1.8	600	-	120	513	2.5	1051	1.2	3649	61	13.1	-	8.22
	NH ₄ OAc	-	48.9	6311	-	296	1617	68.4	206	2.4	306	61	90.5	-	8.34
	Na ₄ P ₂ O ₇ .10H ₂ O	286.0	7.0	1365	1292.4	213	664	102.5	128374	64764.0	323	1126	59.0	14.6	10.21
	HOAc	440.7	1.0	9028	210.9	145	1396	123.4	15885	11794.4	256	1431	30.9	1.9	3.51
	HCl	1140.1	19.7	5499	555.7	303	1831	78.3	654	2187.0	172	2315	22.8	0.8	1.93
CSW 14-16 cm	H ₂ O	0.4	0.9	188	0.3	62	132	0.6	1705	2.0	1285	44	4.7	-	8.89
	NH ₄ OAc	-	59.1	3452	-	287	1170	64.1	336	1.5	117	34	59.3	-	8.21
	Na ₄ P ₂ O ₇ .10H ₂ O	283.7	10.0	1012	788.1	196	270	123.7	131792	67389.3	74	920	7.8	7.3	9.75
	HOAc	115.8	3.2	1407	56.2	92	735	30.0	4183	512.5	41	832	3.9	-	3.15
	HCl	1154.5	9.6	1435	440.8	210	786	23.3	236	898.6	45	1747	5.1	0.5	1.89
CSW 26-28 cm	H ₂ O	-	0.6	449	-	44	177	1.0	2155	1.2	2090	42	6.3	-	8.71
	NH ₄ OAc	-	54.0	3697	-	247	818	60.7	348	1.2	105	36	39.8	-	8.17
	Na ₄ P ₂ O ₇ .10H ₂ O	238.8	6.1	813	360.2	141	178	107.1	135771	68626.9	46	672	3.8	4.8	9.88
	HOAc	199.7	2.0	2392	39.7	88	1122	41.3	6366	970.7	63	957	3.5	-	3.20
	HCl	1273.7	8.7	1741	412.4	208	931	32.1	296	1150.3	50	1893	4.5	0.5	1.89
Solution Blanks	H ₂ O	<0.005	<0.005	<0.01	0.01	<0.01	<0.01	<0.005	<0.01	<0.01	<0.02	0.03	<0.005	<0.005	7.00
	NH ₄ OAc	<0.005	<0.005	0.01	<0.005	0.02	0.01	0.01	0.05	0.04	<0.02	0.02	<0.005	<0.005	8.00
	Na ₄ P ₂ O ₇ .10H ₂ O	<0.005	<0.005	0.07	0.11	0.15	0.01	<0.005	NM	NM	0.05	0.14	<0.005	<0.005	10.75
	HOAc	<0.005	<0.005	<0.01	<0.005	0.01	<0.01	<0.005	0.02	0.08	<0.02	0.03	<0.005	<0.005	2.67
	HCl	<0.005	<0.005	0.01	0.01	<0.01	<0.01	0.01	0.02	0.02	<0.02	0.01	<0.005	<0.005	1.74
Detection Limits		<0.005	<0.005	<0.01	0.01	<0.01	<0.01	<0.005	<0.01	<0.01	<0.02	0.03	<0.005	<0.005	