

Table S1. The Average value of element concentrations (ppm) in Qaroun Lake sediments in year 2018.

Site No.	Mn	Sb	As	Cd	Cr	Cu	Fe	Pb	Se	Zn	Ni	Co	Mo	Li	Mg	Al	Ba	Zr	P	Ga	Hf
S1	331	8.56	3.37	5.05	36.1	35.6	11342	10.6	0.01	36.8	23.1	15.3	2.32	27.3	1075	16890	184	10103	2820	178	10.7
S2	716	4.32	20.5	5.61	49.1	16.9	7996	5.95	0.43	14.2	12.4	11.2	1.57	17.2	987	17002	245	11850	2699	196	11.0
S3	509	11.3	5.95	5.15	60.0	23.1	8921	4.76	0.02	11.3	10.8	17.3	1.01	14.7	1241	12855	280	11907	2925	290	11.9
S4	217	6.95	24.6	5.76	20.1	10.4	5863	0.03	6.03	4.4	3.1	7.35	0.98	21.0	685	10001	102	7688	3696	247	5.69
S5	298	6.86	17.3	4.45	36.4	20.8	7288	3.05	0.09	21.0	15.7	16.0	3.64	17.6	1174	10400	113	5844	2825	177	7.06
S6	340	6.06	14.7	5.04	38.0	25.8	9778	4.15	0.01	11.7	16.5	9.67	0.63	24.6	1043	16052	205	7262	3066	124	9.88
S7	321	2.66	13.9	4.95	29.8	18.6	7866	8.85	3.09	13.1	14.3	10.3	0.30	19.1	1210	17006	242	7009	2802	89.7	9.45
S8	381	4.78	10.7	6.34	50.0	36.7	17016	2.51	0.04	23.0	20.0	17.1	0.90	22.9	1046	21743	295	8234	3090	136	13.9
S9	463	4.58	23.7	4.32	26.3	17.2	6094	2.4	0.96	12.9	10.6	10.7	0.65	15.4	801	10993	198	5956	3213	121	7.97
S10	116	1.22	26.5	3.23	9.38	6.09	2519	0.01	4.12	8.04	5.85	2.05	1.33	15.1	790	3400	60.0	2063	3209	44.1	4.55
S11	44	0.01	25.6	3.89	6.07	3.01	2251	ND	7.85	0.04	3.01	2.52	0.06	16.6	968	6632	98.5	4688	2769	28.1	3.92
S12	109	4.89	23.3	4.43	13.1	7.02	3172	0.16	5.98	0.06	1.89	6.73	3.02	17.0	880	9921	158	5902	3134	115	5.81
S13	258	13.1	33.5	5.73	40.4	23.5	12972	7.08	1.04	40.7	9.61	18.0	0.10	18.9	1367	9899	55.4	3642	4292	190	7.23
S14	194	10.4	22.9	5.92	47.6	32.0	14896	5.01	0.01	43.9	18.1	9.87	4.12	40.0	998	18122	102	4977	3256	142	10.9
S15	143	5.12	15.4	4.16	16.5	12.5	6945	0.01	1.58	0.01	2.72	11.0	0.09	10.3	1163	10222	172	4774	2836	171	5.35
S16	322	12.0	10.2	7.81	74.3	69.1	18224	10.32	0.03	92.6	32.5	19.6	0.98	24.0	1050	17942	165	10530	3256	190	20.0

Not detect (ND)

Table S2. The Average value of metal concentrations (ppm) in Qaroun Lake sediments in year 2019.

Site No.	Mn	Sb	As	Cd	Cr	Cu	Fe	Pb	Se	Zn	Ni	Co	Mo	Li	Mg	Al	Ba	Zr	P	Ga	Hf
S1	335	7.68	4.59	5.65	37.1	36.4	11598	9.54	ND	39.2	22.2	14.4	1.27	26.5	975	17330	165	10802	2695	159	12.9
S2	787	5.84	22.3	5.31	48.6	18.1	7861	6.55	0.52	13.5	11.8	12.5	1.38	18.0	929	16558	286	12131	2789	202	10.4
S3	568	10.3	6.65	5.67	63.3	22.0	8869	4.28	ND	11.0	12.8	19.7	0.7	13.1	1082	13133	257	12177	2777	324	11.5
S4	224	7.34	27.9	5.64	21.0	11.3	5736	ND	6.54	5.9	2.16	9.63	1.55	19.3	708	9452	121	7658	3394	221	7.64
S5	313	7.57	15.5	4.47	34.9	21.1	7324	2.7	0.07	20.0	17.5	13.4	2.69	19.2	1015	10188	95.3	5557	3052	166	7.82
S6	363	6.36	12.3	5.34	36.5	23.6	9859	4.67	ND	12.4	15.5	12.3	ND	23.7	1157	16637	237	7642	3290	141	10.3
S7	371	2.87	12.9	4.86	28.3	17.1	7746	8.15	3.12	11.4	12.2	9.16	0.08	22.4	1113	17259	258	7135	3025	104	8.81
S8	364	4.13	9.52	6.84	48.3	39.1	16237	2.73	ND	25.8	22.3	15.6	0.18	24.0	1123	21258	281	8778	2917	146	15.7
S9	483	5.69	20.6	4.46	28.2	15.7	6294	2.15	1.02	12.2	9.50	9.12	1.2	13.4	876	10583	158	5795	3414	107	7.27
S10	110	1.76	27.5	3.33	8.42	6.49	2319	ND	3.75	6.88	6.20	2.93	1.54	14.1	859	3124	45.6	2274	3137	46.2	3.73
S11	48.3	ND	24.2	4.02	6.55	3.60	2134	ND	8.16	ND	2.70	0.79	0.68	14.3	916	6458	105	4569	3004	36.3	4.18
S12	106	5.07	25.9	4.53	13.8	6.60	3979	0.3	5.66	ND	2.08	4.45	1.25	15.7	971	9987	176	5800	3233	99.8	5.53
S13	268	12.9	36.5	5.57	41.1	25.4	12539	7.86	0.91	46.0	8.14	16.7	ND	20.9	1325	9949	62.5	3747	4393	200.4	9.45
S14	186	9.89	24.5	6.12	49.1	31.8	14754	4.88	ND	40.7	16.8	12.1	5.92	38.1	1037	18575	93.5	4621	3327	162.6	12.7
S15	169	6.38	19.3	4.86	17.2	13.0	7033	ND	1.88	ND	1.44	8.95	ND	12.9	1301	9531	194	4579	2978	158.2	6.58
S16	352	10.9	11.2	7.38	72.2	68.3	18981	11.75	ND	88.6	34.2	22.5	1.6	26.2	963	18594	150	11562	3498	220.0	18.4

Not detect (ND)