APCA factors = 6

Rachel Tao

1/31/2021

Predicted concentration and Percent Error

element	MeanConc	source_1	source_2	source_3	source_4	source_5	source_6	r_squared	PredConc	Pct_error
aluminum	20.906	-0.191	20.211	-1.471	3.126	1.879	1.235	0.619	24.789	18.58
arsenic	0.657	0.278	0.033	0.041	0.150	0.032	0.012	0.330	0.545	-17.03
barium	6.227	0.562	0.885	3.222	1.814	-1.115	0.960	0.917	6.327	1.61
bromine	3.312	1.274	0.114	-0.021	1.257	-0.099	0.196	0.589	2.721	-17.84
cadmium	1.510	-0.092	0.081	-0.069	0.149	-0.080	-0.009	0.011	-0.020	-101.34
calcium	56.074	1.747	19.033	-0.663	32.400	-2.785	-1.174	0.711	48.560	-13.40
chromium	1.628	-0.196	-0.111	-0.036	-0.421	3.338	-0.234	0.294	2.339	43.70
copper	4.483	0.580	0.455	0.058	2.109	1.393	0.447	0.699	5.043	12.48
iron	111.841	13.293	28.919	1.949	25.810	36.427	1.433	0.960	107.831	-3.59
lead	3.293	1.344	0.396	0.359	2.260	-0.367	0.067	0.629	4.059	23.24
magnesium	7.682	0.061	0.680	0.452	0.371	-0.730	1.481	0.125	2.316	-69.86
manganese	2.373	0.407	0.688	-0.019	1.513	0.363	-0.080	0.685	2.871	21.01
nickel	8.590	2.605	0.533	1.188	4.985	0.001	-1.676	0.934	7.637	-11.10
nitrates	1811.742	889.636	-63.063	-49.501	962.873	122.526	-51.797	0.619	1810.675	-0.06
pm25	11855.453	4860.086	1824.951	7.394	1718.873	484.892	366.934	0.766	9263.131	-21.87
potassium	47.913	8.508	9.661	2.338	12.887	-0.146	6.067	0.214	39.315	-17.95
selenium	0.755	0.679	0.128	0.048	0.139	-0.050	-0.018	0.773	0.926	22.59
silicon	72.073	9.324	59.260	0.364	5.147	-7.317	1.260	0.913	68.038	-5.60
sulfate	3008.629	1860.004	706.139	33.329	-313.679	-17.717	148.965	0.756	2417.041	-19.66
titanium	3.445	0.520	2.146	0.322	0.508	0.004	0.023	0.691	3.522	2.26
vanadium	4.449	2.122	1.088	0.277	1.975	0.142	-0.253	0.708	5.350	20.25
zinc	26.876	3.272	-1.006	-0.329	25.477	-2.426	0.701	0.900	25.690	-4.41

Proportion of each element coming from each source

element	source_1	source_2	source_3	source_4	source_5	source_6
aluminum	0.00	76.41	0.00	11.82	7.10	4.67
arsenic	50.97	6.08	7.44	27.50	5.81	2.20
barium	7.56	11.89	43.29	24.37	0.00	12.90
bromine	44.84	4.00	0.00	44.25	0.00	6.91
cadmium	0.00	35.11	0.00	64.89	0.00	0.00
calcium	3.29	35.79	0.00	60.92	0.00	0.00
chromium	0.00	0.00	0.00	0.00	100.00	0.00
copper	11.51	9.03	1.15	41.82	27.63	8.86
iron	12.33	26.82	1.81	23.94	33.78	1.33

element	source_1	source_2	source_3	source_4	source_5	source_6
lead	30.36	8.95	8.11	51.07	0.00	1.52
magnesium	2.01	22.32	14.85	12.19	0.00	48.63
manganese	13.69	23.16	0.00	50.92	12.23	0.00
nickel	27.97	5.73	12.76	53.53	0.01	0.00
nitrates	45.04	0.00	0.00	48.75	6.20	0.00
pm25	52.47	19.70	0.08	18.56	5.23	3.96
potassium	21.56	24.48	5.93	32.66	0.00	15.37
selenium	68.30	12.92	4.80	13.98	0.00	0.00
silicon	12.37	78.64	0.48	6.83	0.00	1.67
sulfate	67.67	25.69	1.21	0.00	0.00	5.42
titanium	14.77	60.91	9.14	14.42	0.10	0.66
vanadium	37.87	19.42	4.94	35.24	2.53	0.00
zinc	11.11	0.00	0.00	86.51	0.00	2.38

Bar graph of proportion of each element coming from each element